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Articles include clinical and experimental studies, discussions of theory, significant historical and cultural material and related data.

It is the purpose of this Journal to present in an integrated manner the best research in scientific hypnosis and to encourage and support continued research.

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Editorial

With this issue the *Journal of Clinical and Experimental Hypnosis* completes its first year of publication. Founded during 1953 as the official organ of The Society for Clinical and Experimental Hypnosis, this Journal devoted to original research in scientific hypnosis has established itself as a stable and productive publication. In a scientific atmosphere which has rarely looked upon hypnosis with perceptual clarity, this new Journal has been received in a manner both gratifying and surprising. Subscriptions from universities, libraries, clinical centers and hundreds of physicians and psychologists throughout the world attests to the interest and support which this publication has achieved. Each month witnesses continued growth and expansion.

Contributions to the Journal have been received from workers in Holland, Australia, Japan and Chile in addition to those from the United States. In addition to meeting a need for a unified source of publication in scientific hypnosis, the Journal appears to be playing a significant role in stimulating and encouraging research with hypnosis in a number of areas of the behavior sciences.

The success with which the Journal has met during its founding year is the result of many factors. The initial stimulation from The Society for Clinical and Experimental Hypnosis, the backing and support of the Board of Editors, the meaningful research contributed by the physicians, psychologists and allied scientific workers comprising *Volume 1* and above all, the motivation, skill and energy of The Woodrow Press without whom this Journal could not have been born.

Perhaps in the final sense, the emergence of this Journal as the major source of contemporary research in hypnosis is the reflection of a new perception of hypnosis as a useful and productive area of science.

M.V.K.

The Therapy of a Psychosomatic Headache

MILTON H. ERICKSON, M.D.
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Introduction

Too often trite observations are made to disparage experimental findings. For example, a professor of internal medicine, after reading a psychiatric report upon a single patient, remarked that one case proves nothing. Reply was made that a single instance of an untried medication administered to only one patient with lethal results proved much more than could possibly be desired. The nature and character of a single finding can often be more informative and valuable than a voluminous aggregate of data whose meaning is dependent upon statistical manipulation. Particularly so is this true in the field of human personality where, although each individual is unique in all of his experiential life, single instances often illustrate clearly and vividly aspects and facets of general configurations, trends and patterns. Rather than proof of specific ideas, an illustration or portrayal of possibilities is often the proper goal of experimental work.

In a comparable fashion another type of assumption places limitations unwarrantedly upon experimental findings. For example, many psychotherapists regard as almost axiomatic that therapy is contingent upon making the unconscious conscious. When thought is given to the unmeasurable role that the unconscious plays in the total experiential life of a person from infancy on, whether awake or asleep, there can be little expectation of doing more than making some small parts of it conscious. Furthermore, the unconscious as such, not as transformed into the conscious, constitutes an essential part of psychological functioning. Hence, it seems more reasonable to assume that a legitimate goal in therapy lies in promoting an integrated functioning, both singly and together, and in complementary and supplementary relationships, as occurs daily in well-adjusted living in contrast to the inadequate, disordered and contradictory manifestations in neurotic behavior.

The Patient

To illustrate the above considerations, the following case history is reported.

A professionally trained female employee of a state hospital was referred to the writer for therapy after extensive medical study. Her complaint was one of severe headaches, for which numerous medical studies had found no physical basis, and severe personality disturbances manifested in quarrelsomeness and uncooperativeness. At the time she was seen, she had been given notice of her discharge to take effect either immediately, or, if she sought therapy from the writer, in six weeks' time.

Under these adverse circumstances, the patient sought out the writer, explained the situation bitterly, and declared that she was confronted with "the choice of wiring home for transportation money or being messed around with by a damn hypnotist." (The fact that the writer was wholly innocent

of any part of her situation was totally disregarded by her.) She added ungraciously, "So here I am. What do you want? Go ahead."

An effort was made to secure her history but she was uncommunicative and remained so throughout the course of therapy. The only material obtained were the following fragments:

For the past four years, beginning when she parted ties with her childhood home, she had been suffering from intense, unlocalized headaches. These sometimes occurred twice a week, were accompanied by nausea, vomiting and physical incapacitation from two to four hours' duration. Also, they were always associated with intense, inexplicable emotional disturbances characterized by extreme quarrelsomeness, bitterness and violent verbal attacks on everyone about her. Usually these emotional disturbances presaged the headaches, and upon recovery from that symptom, she would remain seclusive, subdued and somewhat socially adjusted for a day or two until the next attack.

Every attempt to secure more adequate information from her failed. She resented any questions or even casual conversation about herself. Also, she was embittered by the fact that she had been given notice of her impending discharge and only then had been referred for psychotherapy, "as if to make up for firing me."

This behavior of hers had caused her to lose one position after another as well as all of her friends and even the possibility of making new friends. Hence, she felt most lonely and wretched about her situation.

Therapeutic Procedure

She was unfriendly and uncooperative at the first interview and so was told only that hypnosis might possibly be of value but that it would first be necessary to see her during one of her headaches.

A few days later word was received that she was confined to bed with a sudden headache. She was found to be pale and drawn in appearance. She flinched whenever she moved her head or body, and was dazed, slow and unresponsive in her general behavior.

A few hours later she was found recovered from her headache, spasmodic and excitable in her movements. She spoke in a high-pitched tone of voice, scolded and excoriated everybody and seemed to take a sadistic delight in making cutting, painful remarks. She was most unwilling to discuss her condition, denounced the hypnotist and demanded to be left alone. The next day her characteristic depressive reaction set in and she was silent, seclusive, but would occasionally make self-condemnatory remarks.

A few days later, in a pleasant, affable mood, she approached the hypnotist spontaneously for hypnotic therapy. However, she dismissed all attempts at questioning, declaring politely but emphatically that her only problem was her headaches and that all therapy should be directed entirely to that one symptom. If this were done, she explained, her other difficulties would vanish, since they all derived from the headaches and her reactions to them.

Finally it became necessary to accept her on her own terms, with the mental reservation to resort to experimental measures.

Repeated attempts at hypnosis produced only light trances but these were capitalized upon to secure her cooperation as a demonstration subject for a teaching clinic. By this measure it was possible to induce a profound trance in which she was given adequate training and instruction to permit the induction of profound trances in the future.

During the course of the next four weeks, a total of fifteen profound trances were induced. These trances were utilized to give repeatedly, emphatically, and insistently the following suggestions, until, more or less under duress, she accepted them and agreed to obey them:

1. Should a headache develop unexpectedly, or should she develop the irritability that experience had taught her presaged a headache, she was to go to bed at once and sleep soundly for at least half an hour. This, she was told repeatedly, would serve to abort either of the manifestations.

2. Following this half hour of sleep she was then to spend at least an hour, preferably more, in mentally reviling, denouncing, condemning and criticizing anybody and everybody she wished, giving free rein to her fantasies as she did so. This was to be done at first in obedience to the instructions given her, but that sooner or later she was to carry out these instructions solely because of her own sadistic desires.

3. She was further told that, after she had secured adequate emotional satisfaction from these fantasied aggressions, she was to sleep soundly and restfully another half hour. Then she might awaken and go about her work freely and comfortably with no need to "hate herself." This would be possible, it was explained, because obedience to the foregoing instructions would result in an hypnotic sleep that would persist until she finally awakened to go about her work in a rested, comfortable fashion. Of all this, she would know only that she had gone to bed, fallen asleep, and had finally awakened feeling comfortable and rested in every way.

During the first three weeks the subject obeyed these instructions a half dozen times by excusing herself from her work, returning to her room and falling asleep. She would remain in this sleep from two to three hours and then rouse up and seem refreshed and comfortable. Several check-ups during periods when she was sleeping disclosed her to be in a trance state, but not in good rapport with the writer.

During the fourth week a new procedure was introduced. This was also in the form of a post-hypnotic suggestion to the effect that on a certain day, at a specified hour, she was to develop a severe headache. As this developed, she was to fight against it and to persist in working until she could no longer stand it. Then she was to go hastily to her room and obey the first series of suggestions.

These instructions were carried out fully. At 1 p.m. on that day, three hours after her headache had begun, she returned to work adjusted socially in a satisfactory fashion. Her only complaint was a comment on her ravenous hunger, since she had missed her lunch. On previous occasions such an

event had often been seized upon to justify her irritability. Thus, she had been given experiential proof of the effectiveness of hypnotic suggestion and of the possibility of a good therapeutic response.

About a week later, in another trance state, she was given post-hypnotic instructions to develop at a given time the emotional disturbance that often presaged a headache. As this developed, she was to resist it, to control her tongue except for a few disagreeable remarks, and finally, to develop an overwhelming desire to return to her room, to which she would finally yield. There she was to follow the routine suggested previously.

All instructions were obeyed and after nearly three hours of sleep she returned to her work in a pleasant frame of mind.

These two special trance sessions were purposely included in the course of therapeutic or instructive trances as a measure of forcing the subject to act responsively upon the earlier trance instructions. Subsequent trance states in which the suggestions cited above were given were augmented in force by reference to the experiential values of the post-hypnotically induced headache and emotional disturbances, and the benefits of following instructions.

In addition, every effort was made to impress upon her the future effectiveness of the general procedure and the desirability of yielding at once to the post-hypnotic suggestions.

The last trance session was devoted to a general review of the instructions given to her, the post-hypnotic disturbances suggested to her, her learned ability to meet the whole general problem, and the future applicability of the procedure in the event of further headaches and emotional disturbances.

Repeatedly during trance sessions, efforts were made to learn the content of her thinking during the periods of mental aggression, but she proved uncommunicative. It was, she declared, "too terrible" to relate.

Questioning in the waking state disclosed her to have a complete amnesia for all except the superficial facts that she had been hypnotized repeatedly and that there had been a number of occasions on which she felt a headache developing, and that this had been warded off by a compulsive need to sleep. Every effort to secure additional data from her failed. She did attribute her change in behavior to the hypnosis, but was not curious about what had been done.

The Results

After leaving the hospital, she was not seen for three months. At the next meeting with her she related that she had only two threatened headaches, but had promptly warded them off with a little sleep, and that they had been the happiest three months of her life.

Immediately she began to thank the writer effusively, declaring that her freedom from headaches was unquestionably the result of his hypnotic work. Efforts to secure her reasons for this conclusion elicited only more expressions of certainty, conviction and gratitude but with no evidence of any true understanding or knowledge of what had occurred therapeutically.

She was interrupted in her thanks and the suggestion was given insistently that adequate expression of gratitude could come only from continued satisfactory adjustment in the future. With this remark the interview was closed.

More than fifteeen years have elapsed and the therapeutic outcome has been good. She secured a position in another part of the country and has been promoted progressively until she is now a departmental head. Each Christmas a greeting card expressing briefly her gratitude is received. Occasionally a business letter is received, asking for references concerning somebody the writer knows, or recommending to him somebody needing therapy or a job placement.

One additional fact is that acquaintance has been made with several persons who have worked for her. They have been found to entertain the highest regard, personal liking and respect for her and to be most enthusiastic about her charming personality.

In response to a specific letter of inquiry, she stated that she had on the average three headaches a year, but that these responded readily to brief rest. She expressed the belief that these headaches were "different" from her former headaches and that she attributed them to reading without her glasses.

She is now in her early forties, unmarried, wholly content, absorbed in her work and the creature comforts of her tastefully decorated apartment. She was described by a competent psychiatrist who knew her well, but nothing of the above history, as, "She's just one of those delightful people you like to number among your friends. She looks upon men as charming companions but nothing more. She's most enthusiastic about her work and inspires everyone who works under her. After the day is over, she likes her home, or the theater, or concerts, or has some of us in for a social evening. She is content and happy. You must have enjoyed knowing her."

Comment

A definitive discussion, even of a single aspect of this case history, is impossible since it is restricted entirely to overt symptoms. The only things known are what the therapist tried to do, but not the experiential signifinances thereof to the patient, and the subsequent, definitely successful therapeutic results.

At most it can be said that an experimental procedure was employed which, in some manner, permitted the patient's unconscious, distorted and disorganized in its functioning, to achieve a satisfactory role in the total experiential life of the patient, and to do so without becoming a part of the conscious. That such an outcome was possible with one patient suggests strongly that a comparable procedure could be adapted satisfactorily to the therapeutic needs of other patients.

Hypnosis and Recorded Suggestions in the Treatment of Migraine: Case Report

JOHN S. HORAN, M.D.*

The etiology of migraine headaches is not understood, nor has the mystery of its pathological pattern been elucidated so far. Apparently the pathology is physiological, chemical, or both. Allergic, endocrine, and nervous factors have been implicated in the causation of the disease, and the victims are usually of a pattern that has been described as the migraine type. They are usually well-dressed, educated, intelligent, conscientious, small-boned, and attractive. Their attacks often follow emotional stress, overwork, undue responsibility, and other types of strain, but may not (1). Foods, especially chocolate (2), have been found guilty in some patients, and their removal will occasionally bring welcome relief. Tobacco, or its active ingredient nicotine, may be the cause; in two patients I have known, the headaches stopped when the smoking stopped. One theory holds that the migraine syndrome represents a variant of epilepsy, and, in fact, the relatives of migraine victims have been found to have epilepsy in a number of cases. Whatever the cause or the pathogenesis, the condition represents an altered physiological state that causes great suffering and disability in the unfortunates that are affected by it.

Treatment of migraine has been distinguished more for its variety than its specificity. Ordinary analgesics do not have much effect. Opiates are undesirable and not too successful. Ergot derivatives have been of some help, but their toxicity is high, and often the victim has signs of ischemia before he experiences great relief. Recently an ergot derivative mixed with caffeine has been giving fair results. There is, however, no known remedy that will help in every case of migraine. Each individual victim represents a separate problem demanding analysis, and a careful evaluation of the individual allergic, endocrine, chemical, constitutional, and psychic factors, without forgetting the possibility of brain tumors.

In the treatment of the migraine patient I have tended to favor the use of local anesthetics such as procaine and tetracaine, both intravenously and in the affected areas. In many patients with migraine the anterior frontal branch of the superficial temporal artery when palpated is found to be pulsating with more force than would be expected, and pressure on this artery with the finger may relieve the pain. If the pain is helped by digital pressure on the artery, a periarterial injection of tetracaine with a fine needle (#26 or 27 guage) will frequently give considerable relief. Along with the temporal condition, or without it, the patient may have low occipital aching and spasticity of the posterior neck muscles. Infiltration of the spastic muscles with tetracaine is also helpful. Intravenous tetracaine (10 cubic centimeters of 0.25% given slowly) has been useful. Inhalations of carbon dioxide 10% and oxygen 90% may also be useful.

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The following case report is presented as an example of a patient who had received a great variety of different drugs, and who finally achieved complete relief from hypnosis, even when the hypnotic suggestions were from a tape recorder.

Case Report: Mrs. E. W. was a 44-year-old white female who complained of frequent migraine attacks over a fourteen-year period. She had been to a large and well-known clinic in the eastern part of the United States, where she had been "run through the production line," as she called it, and at the end had been patted on the back, informed that she had migraine, and sent away without any recommendations for treatment. She had been treated by various doctors with a long list of remedies, including ergot derivatives, without much benefit. She had many interviews with a psychiatrist, which revealed that she had a great deal of resentment against her husband, who had been away from her much of the time in the early part of their marriage, due to pressure of business. Even though she had good insight into her resentment, the migraine continued. Ergot and ergot derivatives and caffeine were useful, but she soon developed a tolerance to the point where continued use of the drug for the pain made the risk of gangrene rather acute. She responded fairly well to infiltrations of 0.15% tetracaine hydrochloride around the anterior frontal artery, the supraorbital nerve, and the posterior neck muscles. This treatment was alternated with intravenous injections of ten cubic centimeters of 0.25% tetracaine. While the pain was improved, the patient still complained of lack of appetite and inability to sleep without barbiturates. Hypnotic treatment was offered but firmly rejected, since it was thought to be "foolishness."

After six months of treatment with tetracaine, her situation became complicated by the fact that her daughter was about to be married, and all the responsibility of preparing for a large church wedding and the reception fell on the patient, who found her daughter's future in-laws very hard to please. The strain of her rather difficult task, as would be expected, caused her to have practically continuous headaches, anorexia and insomnia, and she became desperate enough to desire hypnosis. She proved to be a good subject and readily went into a fairly deep trance.

While she was in the trance simple suggestions were given that her headache was going away, that she would have a good appetite and be able to eat, and that sleep would be possible without recourse to barbiturates. She was then awakened slowly and was completely free of head pain. She felt hungry and announced that she was going out to eat a good meal. Later she reported that she had slept without sedatives. The relief lasted for several days until she became embroiled in a heated argument about the wedding plans; following the argument the headache returned, along with the insomnia and the anorexia. She was rehypnotized, suggestions were given, and became completely comfortable as before. This convinced her that hypnosis was useful, as results with it were better than with any previous therapy.

At this time, however, I was planning to move away from her city to an area about 2,000 miles away. The patient and her husband both requested that something be done to give a continuing treatment. This at first appeared impossible, in view of the nature of hypnosis. Purely as a measure

of desperation, I suggested that possibly the helpful suggestions could be recorded on a moving tape, in view of the fact that hypnosis can be induced by a phonograph record. I pointed out that the method would be purely experimental, and results could not be predicted. A Pentron T-3 Tape Recorder was purchased, and after a few trials, a hypnotic session was recorded on a 30-minute magnetic tape. The recording started with repeated suggestions of relaxation and drowsiness, followed by more positive instructions to concentrate on sleeping. As a precaution, a suggestion was repeated several times to the effect that if my voice should be interrupted (owing to power failure, mechanical difficulty, or tape breakage) the subject would awaken within five minutes, with no ill effect and without the headache. To deepen the trance, a metronome was started ticking at fifty ticks per minute, and the subject was told to listen carefully to the ticking, which was a drowsy, monotonous sound that would help her to go deeper into sleep. After fifteen minutes of the metronome's sedative ticking, strong suggestions were given to the effect that the headache was going away and would be gone when the subject awakened, that she would awaken relaxed and refreshed and with no ill effects from hypnosis, that she would be able to sleep that night without sedatives and that she would be able to eat without nausea. These suggestions were repeated and then followed by a brief period of deep sleep and a slow awakening.

The recorder and the tape were then delivered to the patient with some simple directions. Whenever she felt a migraine attack beginning, she should connect the recorder to an electrical outlet near a bed or comfortable chair, turn it on, then either lie down or sit down and relax completely. At my last session with her, she was hypnotized briefly and given a post-hypnotic suggestion that my voice from the loudspeaker of the tape recorder would have the same effect as my voice had had in a personal interview.

Conveniently, the day following, a decision with regard to the approaching wedding precipitated an emotional clash that brought on a recurrence of headache. The patient tried the recording and experienced dramatic relief.

Three years have elapsed. She continues to experience relief of her symptoms by the use of the recorded hypnotic suggestion.

Discussion

The case above is presented because of its rather bizarre features. It is notable in that in the hypnotic sessions no attempt was made to explore the dynamics of the patient's resentment or her illness, no insight was given into psychic mechanisms connected with the migraine. This had been done before, in conventional psychiatric interviewing, without much result. Under hypnosis, the only suggestions given were concerned with direct symptomatic relief of headache, insomnia and anorexia. For the patient's purposes, these were sufficient. Just how the pathological physiological state causing the migraine attacks was altered by direct and recorded suggestion is a mystery to this writer. It may be that hypnotic states can cause a dissociation of the subject from the emotional stress related to the attacks. Or perhaps the

strangeness and the mystery of hypnosis was sufficient. It would be absurd to make any claims about the efficacy of hypnosis in migraine patients in general on the basis of this one case. In a disease which causes as much disability and suffering as migraine, however, it is profitable to report any safe means that gives a satisfactory result.

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1. Mackay, Rd. P. Psychosomatic aspects of neurology. *Neurology*, 1951, 1, 111-118.
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Hypnoanalytic Study of a Patient with Extrasystoles

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This report will deal with some references to the psychological aspects of extrasystoles, notes on a patient with complaints referable to extrasystoles, the relationship between tension and the appearance of extrasystoles in this patient, psychodynamic aspects of this psychosomatic symptom, and excerpts from hypnoanalytic sessions illustrating the above.

Literature

Dunbar (3) referred to the study by Wenckebach and Winterberg (cited by W. H. von Wyss) who studied 278 patients with extrasystoles and found that 55 percent showed no organic damage. The patients fell into two groups of which the first had become "nervous" as a reaction to the extrasystoles, whereas the second experienced extrasystoles because of their personality functioning. (It will be seen that the patient to be discussed here fit both these categories.) Dunbar also quoted Fahrenkamp and Fleisch. Some patients were much disturbed by the extrasystoles according to Fahrenkamp, and others continued unaware of them. The reasons for these reactions were unknown. Neurotic patients overevaluated the extrasystoles. Fleisch found a large number of students experiencing extrasystoles while taking examinations. In recent years, too, there have been studies on the psychological aspects of disturbed cardiac functioning. Thus, Stevenson et al. (9) reported on life situations, emotions, and extrasystoles. Duncan et al. (4) wrote about life situations, emotions, and paroxysmal auricular arrhythmias, and Crede et al. (2) discussed electrocardiographic abnormalities associated with emotional disturbances.

Raginsky (6) was able to induce and eliminate extrasystoles in susceptible subjects with the use of hypnosis. He was also able to induce cardiac arrest hypnotically by effecting a reliving of such experiences in a patient for whom the carotid sinuses had previously been surgically removed owing to such cardiac arrest and syncope. Other studies involving hypnosis and heart symptomatology have been reported by Reiter (7), Van Pelt (10), Bennett and Scott (1), Kline (5), and the present writer (8).

Summary of Background Experiences

The patient was a 37-year-old married man. He was born in a large city and reared in poverty. His father died during the patient's early childhood. The father's age at death was between 23 and 25 years. His mother worked to support him. He claimed that he missed his father considerably and felt different from others because of this circumstance, as well as his poor financial and living conditions. Shy and self-conscious, he lacked self-confidence. He completed public schooling, was graduated in pharmacy, and then encountered difficulties in dealing with people, especially his employers. He

wished to please his mother during childhood and adult life and was easily upset when finding himself disagreeing with her and wanting to do what he thought was best for him. The patient married a woman who was evidently extremely attached to her mother with the patient assuming a completely secondary role. His mother-in-law was the dominant figure in the household. They lived together and the patient became involved in the family business. He became increasingly engrossed in the personal and business needs of this woman and began to function essentially as an appendage to her. During the hypnoanalysis his distinctly masochistic relationship with her became increasingly evident at the same time that a view toward growing desire for independence was clarified. In various ways she was identified with the patient's mother, toward whom his ambivalence and marked feelings of guilt gradually became clear.

The patient said he became aware of the extrasystoles when he was 17 or 18 years old. This awareness continued through the years and he feared increasing damage to his heart with sudden death or premature death based on cardiac damage. A strong cardiac impulse at the time of an extrasystole was experienced by the patient as "skipping." He would react with anxiety. The frequency of the extrasystoles would be difficult to determine, but based on the above they occurred daily on at least twenty occasions. He had several medical examinations and electrocardiagraphic studies. The extrasystoles were thus recorded but the patient claimed that although he was reassured by the physicians on all occasions, his concern about damage to his heart continued unchanged. When the problem was said to be related to emotional involvements he decided to explore this further.

Tension and Extrasystoles

As the hypnoanalysis progressed the patient revealed a growing awareness of the relationship between feelings of tension and the extrasystoles. The tension occurred in relation to what he described as worry. The latter was most frequently connected with business problems in recent years and as indicated above these problems were directly bound to his mother-in-law. His worries were not limited to this, however, and they had to do with his concern about future work, his acceptance by other people, the impression he made on others and his lack of productivity. He was conscious of his Jewishness and felt uncomfortable often because of it. His preoccupation with these and other issues was distinctly obsessive. The frequency of the extrasystoles began to vary during treatment depending on the presence of tension or relief from it, and direct efforts were made in the hypnoanalysis to supply this relief, affect the symptomatology thereby, and capitalize on insight into the relationship between emotion and symptom. The extrasystoles, thus clearly influenced, were established as a psychosomatic problem. Their presence was noted at times in the waiting room during visits and in the midst of the therapeutic sessions. Finally the frequency gradually diminished until they occurred once or twice a day and did not appear for several days at a time. As further insights were developed some aspects of the psychodynamics of the symptom were clarified.

Psychodynamics

Although the patient sought hypnotherapy specifically, several sessions at first did not involve hypnosis. When it was finally introduced a turning point was established and stressed by the patient because tension relief appeared rapidly and extrasystoles were affected as described above.

During the early hypnoanalytic sessions when the patient was given an opportunity to free associate, he dwelled repeatedly on his mother, reiterating details about her difficult life, her support of him, and his feeling of guilt about not having done more for her to make her life more comfortable and happy. He felt he had let her down. He sobbed quietly through sessions while dwelling on this theme. He would turn to this shortly after induction regardless of what he may have been discussing prior to the hypnosis. As the hypnoanalysis continued he appeared to be more emotionally involved during the hypnotic sessions with the material discussed. He seemed less obsessive at such times and data seemed better integrated. Material from hypnotic and non-hypnotic interviews were integrated during the course of treatment. The ease with which the patient entered hypnosis, and his acceptance of it and of the therapist, seemed to be understandable in terms of the hypnotic transference relationship which the preceding and following factual information will help to clarify.

Under hypnosis the patient recalled the onset of his awareness of extrasystoles in his early teens rather than late teens as originally mentioned. At school he had become interested in physiology and the crucial importance of the heart in sustaining life apparently impressed him considerably. At this time his feeling of loss of a father figure continued unchanged. The death of his father in the latter's early twenties deeply affected the patient. He revealed during the hypnoanalysis how he frequently thought of having a father and how through the years, even to the present, he would idealize men whom he met and liked and would fantasy them as fathers to him. Linked to these feelings was his preoccupation with premature death based on cessation of heart beat. The possibility of an early death for him was reenforced by the actual early death of his father. In the meantime his mother was developing hypertension, sustained a stroke, and a few years before the patient entered treatment she died of a heart attack. The patient said he was profoundly affected by this and suffered an exacerbation in his symptoms.

With the absence of a father, fantasies as described in relation to father figures, and his mother as the dominant person at home, the patient developed passive dependent characteristics. At the same time, in view of his socio-economic position, he began to feel increasingly responsible for more aggressive functioning which he found himself unable to achieve. He became self-critical and burdened with guilt. He felt he was not sufficiently masculine. He was uncomfortable with both men and women. He retreated to a fantasy life, and his ability to center attention on his heart paralleled his narcissistic preoccupations. In his middle thirties his feelings of being a failure increased, he believed he had not made good use of his years, and

he felt he had not really "lived." Physical illness could serve as an excuse and enlist sympathy.

Excerpts from Interviews

In addition to previous comments on hypnoanalytic sessions, the following data are supplied to illustrate some aspects of the sessions. Some repetitions are avoided and some important features have not been included.

The patient had been resistant to the use of hypnosis during several sessions. Then he mentioned spontaneously that he felt it was because he probably wanted to use heart symptoms as a "crutch" and as an excuse for his failings. After that, when in hypnosis, he spoke about his self-consciousness and difficulty in meeting people. He mentioned visiting his mother's grave. "I didn't cry. I knew crying wouldn't help." He spoke of wanting to be cheerful rather than depressed. He was told his mind would turn to issues that were disturbing him. "I seem to feel that I never got successful enough to help my mother. My eyes are starting to tear now. My head seems to be swimming around. Going around and around this way." (Makes circular motion with finger.) He spoke about his fear of failure. "I'm worried so much about failure, I'm liable even not to try anything. I want sympathy. Skipping would give me sympathy. (Pause) The hell with everything!"

Dr.: "Why is it that you specifically developed a heart symptom?" Pt.: "My father died." Dr.: "What do you mean?" Pt.: "I figure my father died. His heart stopped. I tied up the two together. He was young. He died when he was 25 years old. Twenty-three. He was young when he died. The hell with it! Why worry? The hell with it! It's stupid to worry about anything!" Dr.: "When did you become really worried about your heart?" Pt.: "When I went to high school. Around that time. I felt my heart was keeping me alive. I always was conscious of it." Dr.: "Do you feel you were a failure then – at that time?" Pt.: "Yeah. I felt the poverty. And no father. Mother had to work." Dr.: "Did you use your heart symptom to obtain sympathy (at that time)?" Pt.: "I don't know how it happened. Just worrying and thinking and worrying. It came out of a clear sky. Worrying built up tension." Dr.: "Did you speak about your heart often?" Pt.: "I was always conscious of it. I'd hear it beating on the pillow. I never spoke to anyone about it. I always thought about it. I thought that was the only thing keeping me alive. (Pause) The hell with it. I don't give a damn!"

Dr.: "When did you become seriously concerned with your heart?" Pt.: "I always thought about it. In the lunch room I'd bend over the counter and feel it beating. It began to skip a lot in college and I worried about it . . . I kept building up tension often. I was unhappy at work, with my bosses. It started to get bad again – worst of all when the mill (his business – actually his mother-in-law's business) started to close up in A..... (four years ago)." Dr.: "When did your mother die?" Pt.: "Labor Day, 1951." Dr.: "Did her death affect your heart symptoms?" Pt.: "It only made me more miserable. . . . My symptoms were very bad after she died – burning sensations and skipping. It seemed to quiet down after awhile." Dr.: "Why do you think you developed the skipping of your heart?" Pt.: "I don't know. I think I

build up tension when I worry. Worry, brooding, thinking, then it pours over after awhile. Like water in a pot. Flows over like a lousy pot. When I do little brooding and thinking, the symptoms are slight. The more I worry, the stronger the symptoms get."

At a subsequent hypnoanalytic session he was encouraged to recall the first time his heart "skipped." Pt.: "It was after school. I was walking up K..... Street in N..... I was crossing B..... Street and it skipped the first time. I was going for a glass of sour cream on P..... Street. That was the first time I noticed it. Crossing B..... Street on the corner of K..... Street." Dr.: "How old were you?" Pt.: "Fourteen." Dr.: "What did it remind you of? Whom did it remind you of?" Pt.: "At school, when I didn't know my lesson. My heart would pound. It was a physical result of my worry and fears. When I didn't know my lessons my heart would pound very hard." Dr.: "Were you ever heart conscious before that?" Pt.: "In physiology class when we learned about the work of the heart. I thought about it..." Dr.: "Did you think you were singled out in some way for having a bad heart for some psychological reason?" Pt.: "I felt it was an important organ. I had to rest and eat food and take care of it. I thought my father had died so young." Dr.: "Did he have a bad heart?" Pt.: "No. He didn't have a bad heart. I always had lung trouble – pneumonia and flu. I thought that was a connection. He had the flu. He must have had the flu. He couldn't have had T. B." (As far as the patient knew, his father had died of influenza.) Dr.: "Do you remember anything else having to do with a bad heart?" Pt.: "Different doctors used to examine me for camp at the clinic. I was always worried about my heart. I was always conscious of my heart from 14 on." Dr.: "Do you feel you should be conscious of it now?" Pt.: "No. I feel I should forget it.... Worrying makes me sick. When I stop daydreaming and brooding I feel better."

Dr.: "How much is your heart skipping now?" Pt.: "Very little. Last three days maybe once." Dr.: "Did you worry about it?" Pt.: "No. I stopped worrying." Dr.: "How much did your heart used to skip before?" Pt.: "When it was bad it used to skip 20 times a day. When I learned not to worry and think about things constantly I improved quickly." Dr.: "Just let your mind wander and see where it goes. Tell me everything." (The patient told of having read about the activities of a Communist who was Jewish. The fact that the man was Jewish bothered the patient.) Pt.: "Little things like that upset me."

Dr.: "I want you to think now about something that will worry you. Think hard about it. It will worry you (Repeat). Think hard." Pt.: "I am thinking about going to (another state) later on and it worries me...." (The patient elaborated on this. The trip was for the convenience essentially of his mother-in-law and stirred up conflict about his dependence – independence problem.) Dr.: "Did you notice anything about your heart?" Pt.: "Nothing happened. That's good.... I'm not going to worry about anything. That's what I've done all my life – worry."

Dr.: "When your mother died of a heart attack did it make your symptoms any worse?" Pt.: "Yes. My heart skipped like hell and burned. It made

me very sick.... When she died I was in bad shape in the hospital. They had to put me in bed there for an hour or so. I cried and was hysterical." Dr.: "When your mother died of a heart attack did you feel you'd be likely to die of a heart condition, too?" Pt.: "Yes. I felt a little more certain it would happen." Dr.: "Do you believe that now?" Pt.: "No. I believe you have to help yourself...." Dr.: "Do you believe you're more likely to die of a heart condition now?" Pt.: "I don't know and I don't give a damn.... I must not care what happens. I'm not worried about it any more. I realize it's stupid and foolish to worry about what will happen...." Dr.: "You've said that worrying about your heart took your mind off other things that you worried about." Pt.: "It gave me a crutch to lean on and I felt sorry for myself."

During another session when the patient was in hypnosis he was asked to think about his mother and father. He said nothing happened to his heartbeat. Then he added, "Maybe I'd better get back out of it (the hypnosis). (Patient grimaced.) I feel tense. My heart skips once in awhile." Dr.: "When did it start?" Pt.: "The last ten minutes." Dr.: "When you thought of your mother and father?" Pt.: "I think it was before." Dr.: "Sure?" Pt.: "I'm in a low, depressed state." Dr.: "Did it start before I told you to think of your mother and father?" Pt.: "Before. I'm positive." Then he said the skipping started when he was in the waiting room, at which time he began to feel depressed. He was pressed to recall his thoughts when in the waiting room and he told of considering a business matter and worrying about what his mother-in-law would think. The mother – mother-in-law identification which had previously been dealt with was recalled to him. He confirmed his awareness of this and continued, "I don't like to have a rope around my neck. I can't be my own boss. Can't be successful on my own. Damn it! Can't be independent. Can't be a man. Just a misfit. Just held down. They (mother-in-law and wife) want to help me but they're holding me down. Maybe I use that as an excuse that I couldn't succeed!"

Summary

Psychosomatic studies of heart abnormalities are available in the literature. A few deal with extrasystoles. Fewer still involve hypnosis. Extrasystoles are reported to have been induced hypnotically. Hypnosis has also been used to study other aspects of cardiac functioning. This report deals with some psychological aspects of extrasystoles in a patient treated hypnoanalytically.

In the hypnotic state there appeared to be enhanced recall, less obsessiveness, greater spontaneity, more emotional involvement with material elicited, and improved integration of data made available.

A direct relationship was shown to exist between states of tension and the extrasystoles. Variation in the frequency of their occurrence set in and this was followed by progressive lessening in the symptom as tension decreased.

The symtom was related to the identification by the patient with his father in relation to pulmonary infections. The heart as a vital organ and the early death of the patient's father both assumed considerable psy-

chological significance for the patient and were obsessively elaborated by him. His mother's death following a heart attack resulted in an exacerbation of the symptom and reenforced his concern. Use of the symptom corresponded to his passive inclinations and his conflict over passivity – aggressivity and dependence – independence problems. His failures could be rationalized on the basis of physical malfunctioning and sympathy enlisted thereby. The symptom appeared to be related also to marked guilt about his relationship with his mother and furthered a dependent masochistic relationship with his mother-in-law who dominated his household and (as revealed in other data) was identified in part with the patient's mother. (At this time, incidentally, his mother-in-law, like his mother, was said to be quite ill with hypertension.)

Therapeutic contact with this patient was time-limited. He travelled a considerable distance from another state for each of his appointments. The psychodynamics available are undoubtedly a fraction of many additional elements involved. Removal to another part of the country interrupted treatment but further opportunity for hypnoanalytic work may become available in the future.

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Delimited Hypnotherapy: The Acceptance of Resistance in the Treatment of a Long Standing Neurodermatitis with a Sensory-Imagery Technique

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Introduction

Orthodox psychoanalysis makes much of the problem of patient resistance. Resistance is conceived of as a phenomenon of defense seeking, in effect, to maintain the neurotically derived pattern of equilibrium which the patient has erected. The patient uses resistance to prevent any dissolution of this dynamic state which, despite its pathological components, represents organismic equilibrium and thus becomes vital to the life force and psychic energy of the individual. Within such a conceptual framework resistance becomes a phenomenon of purposive behavior, goal driven and essentially unconscious. Though some recent attempts have been made to integrate psychoanalytic resistance concept into the more mechanistic structure of learning theory, such efforts are largely descriptive, analogical and semantic.

Resistance or refractoriness to psychotherapy is a factual reality. Its basic meaning and mechanization appears to be neither simple nor unitary. Resistance is merely a descriptive means for identifying a state of dynamic equilibrium. In human behavior, particularly that of the emotions, and that which is characterological in nature, there is spontaneous resistance to change, especially when this change involves an alteration of behavior which we may call habitual, conditioned, patterned or whichever term seems most appropriate. We know living organisms must relegate much behavior to automatism. This is especially true in the human where we perceive aspects of dissociated, semi-conscious an unconscious activity assuming responsibility for a large part of the individual's vegetative and dynamic activity.

As we conceive of the individual's intricacies and variations in adaptive behavior it seems questionable that resistance to psychological treatment represents a unified dynamic purposivism which is essentially etiological in nature and unconscious in formation. Rather it seems that resistance is a way of reacting to a situation which can involve multidimensional aspects of response behavior. Resistance can be a conscious as well as an unconscious process. It may manifest itself as an attitudinal value, or cognitive apperception apart from purposive personality pathology. Likewise, it can assume an almost conversion-like characteristic used manifestly to defend the neurotic structure of personality from therapeutic attack and to preserve the pathological equilibrium from all threats.

To assume a similar purposiveness and design in all resistance to psychotherapy is to make a generalization based upon inadequate data and more important, to organize therapeutic procedures along relatively inefficient lines. To focus on resistance alone may result in a failure to see the patient as

an organismic whole whose availability to treatment often depends upon the therapist's acceptance of resistance rather than his desire to undercut it.

The purpose of this paper is to emphasize the fact that in some cases effective psychotherapy can take place despite strong resistance, without attaching any special significance to the resistance and without any attempt to "explain the dynamics" relative to the resistance.

Case Material

A twenty-six-year-old married woman was referred for hypnotherapy because of a chronic case of neurodermatitis of the hands. When seen, both hands from the wrist to the fingers were red, raw and scaly from much irritation and dryness. The patient indicated that this condition had existed from the time she was about five years of age. There had been some intermittent though brief periods during adolescence when the condition had abated somewhat but this was usually of very short duration. A long history of medical treatment had preceeded the patient's referral for psychotherapy. When seen she appeared rather depressed and quite defensive. She could not see how her hands could be an emotional problem. She was aware of having problems, particularly of a marital and sexual nature but thought that she alone could handle them. She insisted that she really did not want psychotherapy. All she wanted was to have her hands cleared of the long standing irritation and unsightly appearance. In addition she really didn't think that hypnosis could help but she had been urged to try it—by friends, and besides – she had tried all other kinds of treatment without any success.

Life history taking was a great ordeal. The patient would often refuse to answer direct questions or would remain silent for long periods of time up to and exceeding twenty minutes. At other times she would cry at great lengths. Even from the meager data offered and from psychological test results, there was sufficient evidence that this young woman had been involved in a number of very traumatic interpersonal relationships which, in the past, had produced intense personal distress and at present were still influencing her day-to-day living patterns. The major aspects included parental conflict and separation when the patient was only five years of age. This coincided with the patient developing asthmatic attacks, a reaction which lasted for several years. Following separation from the father, both the mother and the child left the United States and lived in Germany. During the war they were stranded in Germany and lived through the occupation period with much personal and emotional distress until they managed to return to the United States. While in Germany the patient became involved in a number of disturbing sexual relationships which, at the time she was seen, still were paramount in her thinking.

At the time she was seen for treatment her marital relationship was precarious and was producing a rather marked reaction of depression. She insisted that she was fully aware of this and did not wish to discuss it. She felt that "personal" things like marriage and sex were not the "business" of the therapist.

In evaluating the resistance which was met here, several aspects must be

considered. There was sufficient evidence that the characterological development of the patient involved the use of mechanisms of avoidance, denial and withdrawal as means of handling conflict. The psychodynamics of these reactions were not very alien to the patient, who in descriptive and comprehensive expression, indicated conscious awareness of at least their existence if not their more encompassing meaning.

Aware of her personal conflicts, she expressed very strongly the desire to work them out alone without professional help. She seemed, despite her difficulty, to be confident that she could solve her problems without any specialized assistance. On the other hand she felt helpless and discouraged about her hands. She said that if her hands could be cured everything would seem much better for her and she would be much more capable of dealing with her everyday difficulties.

Although certain unconscious aspects of this patient's resistance could be inferred and explored, perhaps with great difficulty, it seemed unlikely that such a course would prove fruitful because of the cognitive resistance that was present. That is, the firm, confident desire not to deal with psychodynamic problems. The cognitive resistance was to a considerable degree reasonable and understandable. The neurodermatitis was of some twenty-one years duration. The patient felt the most pressing problems of an emotional nature were those of the present, that is, her husband, her job and her confidence in herself. She felt the past was so confused, so unpleasant, and by her own interpretation, so "largely unconscious", that she wished not to deal with it and to leave it be. Her only request was to help her with her hands if that was possible.

Treatment Procedure

Treatment was undertaken on the patient's terms. A light hypnosis was induced rapidly. Further induction succeeded in only slightly deepening the trance state. While in hypnosis the patient was told that her hands would, (A) "start to grow larger and larger until they were very large" and then she was told that they would, (B) "start to become very warm—warmer and warmer and warmer until they were hot" and then, (C) "they would grow very cold. So cold that she would feel them to be almost freezing" and then (D) "they would grow very large again." A return to normal size with none of the treatment sensations present was the final step.

In conjunction with these directions the patient was asked to visualize the hands becoming large, cold, warm and then large again. She reported that she did not think she felt any changes in her hands during the hypnosis but she could visualize these changes in imagery. Post hypnotic directions were given for the sensations described above to manifest themselves along with the imagery on each day between treatment sessions. The patient was seen once a week. At no time was any suggestion or direction given as to any improvement in the skin condition. The only activity that was suggested was that of sensory and imagery activity. Previous experimentation with imagery as a hypnotherapeutic technique prompted its use in this case (1).

This treatment procedure was accepted by the patient with some amusement and some annoyance. She did not see how this could help, especially

when she was such a poor hypnotic subject, (according to her own evaluation). She repeated that she really did not "feel" any great change in the hands either in hypnosis or post-hypnotically. She did say that the imagery of the sensory changes started to become clearer and clearer in hypnosis and were equally clear post-hypnotically. After six weeks of this treatment the patient's hands cleared completely. Healing could be observed prior to this time and by the sixth week no vestiges of the disorder remained. The patient was elated though cautious. She did not know "why" her hands had gotten better and she was somewhat afraid of a relapse. However, she now appeared much more relaxed, friendly and outgoing. She used the treatment hour to discuss her problems. She did this spontaneously, going into a detailed discussion of her marital relationship and the personality of her husband within which areas she gained insight that she could use productively in her day-to-day living. For the greater part she used the therapist as a nondirective listener. This productivity was in sharp contrast to her earlier marked resistance and coarctation.

After several months during which her hands were not mentioned at all, the patient felt that she could terminate therapy. She expressed the idea that the problems facing her were still formidable but she would in time know what to do. This resolute confidence in her own self determination was fundamentally the same as first expressed, and now rather well justified. Nine months after treatment the patient reported that her hands were fine and that she no longer even thought of them. She still was working out her marital difficulty but seemed happy and confident about the future.

Discussion

In this case patient resistance was based upon both unconscious and cognitive factors. The cognitive factors appear to be reasonable, not without some logical justification and, above all, reflective of the patient's individual wishes. The unconscious aspects of resistance were considered to be only a part of the patient's total unconsciousness and in relation to personality patterns was judged to be an undesirable avenue of therapeutic approach. The patient's conscious resistance was accepted as a self-determined attitude, and treatment was undertaken *within* the delimitations of this attitude not as an attack *against* this attitude. The treatment results in this one case justified both the patient's point of view and the technique of psychotherapy.

In a strict analytic interpretation of resistance as a psychodynamic phenomenon there is a tendency to overlook the fact that such resistance is often part of the more global aspects of unconscious mental functioning, which has its basis in the patient's habitual behavior developments, conditioning, and total neuropsychological equilibrium. To threaten part of a structure may, in some instances, be injudicious to the extent that it defeats reasonable treatment goals or creates additional manifestations of stress which in fact becomes the focus of long term psychotherapy. The question may be raised as to how often a therapeutic attempt to "undercut" resistance is, in fact, a potent projective device which creates an "artifact neurotic reaction" which is then treated. The potentiality for provoking stress reac-

tions and for uncovering "conflict" material exists in all individuals since so much of all mental activity is neuropsychologically unconscious. Experience with such procedures of a projective nature as the Rorschach and Thematic Apperception Test as well as certain hypnotic imagery devices makes it clear that whenever "unconscious" aspects of ideation or affect are elucidated such renditions have "conflict" characteristics.

In focusing upon resistance as only purposive, selective neurotic behavior, we may overlook the more fundamental aspect of dynamic equilibrium in the living organism and its biological basis. Resistance must be considered as a Gestalt behaviorism with a cognitive aspect of at least equal significance to its unconscious aspect. Patient's resistances may be reasonable, understandable and, above all, architecturally descriptive of the outline of personality *within* which, rather than *against* which the therapist may have to work. The form of therapy should follow the function of the patient's personality and there must be an acceptance of certain fundamental attributes of individual behavior which exist beyond a narrow "psychodynamic basis." "Artifact neurosis" may be a correlative residual of a direct attempt to deal with resistance on a purely unconscious, purposive basis. In some instances such a response may be desirable but such determination must be proven, not assumed.

Summary

A case of experimental hypnotherapy of a chronic neurodermatitis has been presented within which the resistance of the patient was accepted as reasonable. Therapy was structured by the patient's limitations and the results, at least in this one case, justified the procedure. It is suggested that a more global perception of resistance be recognized apart from its unconscious meaning and that cognitive aspects of resistance be evaluated and utilized in treatment planning. The problem of an artifact neurotic reaction in resistance oriented therapy is discussed.

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Decomposition and Fusion of Mental Images in the Drowsy and Post-Hypnotic Hallucinatory State

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EDITOR'S NOTE: Although the *Journal of Clinical and Experimental Hypnosis* publishes only original research in hypnosis, exception has been taken to this paper. Originally published in the *Japanese Journal of Psychology*, 1952, 22, 175-188, this work received an award as the outstanding piece of psychological research during 1951 in Japan.

All *tables* are integrated within the paper itself while all the figures are located together at the end of the paper.

PREFACE

In the word association experiment, it can be observed that the mental images corresponding to the stimulus words appear in retrospective attitude. Needless to say, the words combined with the stimulus words can be recalled. But this mental image is so obscure that it is not easy to observe even for the most skilled subject. Some mental images can be fairly clearly observed under certain special situations.

Obonai, one of the authors, once experienced the following: when he had lain himself on the floor mat, closing his eyes in a passive attitude, he experienced an image of a hen. Shortly thereafter, he heard the hen pecking on a board in the hen-house. The image then disappeared. Accordingly, one can interpret this fact to show that an association had been empirically formed between the pecking noise and a memory image of the hen, and that the hen image was recalled and visualized by the noise. This phenomenon is nothing but the ordinary association phenomenon which is called conditioning. This phenomenon is similar to the hypnagogic image, the dream image, or synaesthesia experience. It can be said that the more one can understand this phenomenon, the more extensively can one take account of these phenomena.

Similar images may be observed in a post-hypnotic hallucinatory state. Leuba (9, 10) induced his subjects to visualize the various sensory images of the post-hypnotic trance using the wisdom method of hypnotic sensory-sensory conditioning. Naruse, the other author of this paper, studied in detail the occurrence and modification of various sensory images, following Leuba's method. He improved some aspects in his experimental design. It may be believed that if the images were the clear ones of the memory,

one could open a new way to study the complicated memory trace problem and thinking processes.

Obonai's observations are developed in the natural situation and Naruse's are obtained in experiment. In spite of these methodological differences, both are probably following the association or conditioning method, and when one considers these two phenomena inclusively, more light may be shed on the mechanism of association. This paper consists of two parts. The first consists of Obonai's observations in a drowsy state and the second encompasses Naruse's experiments of the post-hypnotic hallucinatory state. Naruse's findings are restricted to the visual images only, as it is intended to report the other images at another opportunity.

PART I
DECOMPOSITION AND FUSION OF MENTAL IMAGES IN THE DROWSY STATE

EXAMPLE I. June 18, 1948. Getting tired of reading, Obonai is lying drowsily on the floor mat in the sitting room. Just at that moment, a mental image of a rattan chair appears against the sash-door. The rattan chair is the one at Mr. T.'s service.

INTERPRETATION. Originally the rattan-chair and Mr. T. were associated with a noise. But now the noise elicits the image of the chair without Mr. T. This is an example of the decomposed image.

EXAMPLE II. Nov. 8, 1950. In the evening, when he is lying down on the floor mat in the sitting room, and falls into a doze, some images as shown in Fig. 1 appear. In these images are seen a ring chain of volcanos. Soon after this he becomes aware of a noise of a burning gas ring above his head. While trying to observe these images attentively, the images disappear.

INTERPRETATION. When he hears the gas noise, the images of gas flames associated with the noise are recalled, and appear in clear form. But the image color of flames is different to some extent from the perceptive color of gas flame. It is the flame color of a blazing fire which he made in the yard some days before. One can interpret it by the hypothesis that the flame "color" of blazing fire isolated from its form, is combined with the flame "form" of the gas ring, and thus new fusing images are composed. The arrangement of flame is like the one observed diagonally in the gas ring, and it has a familiar appearance. The images appear in the upper part of the visual field, because the gas noise is heard in the direction above his head.

EXAMPLE III. Sept. 30, 1951. In the waking state, still in bed, he sees an image of a frog on something like a tree. The color of the frog's back is bluish green, and the form is a little bigger and more grotesque than a tree frog. Meanwhile an image of the phyllostachyomitis growing in the thick growth or plants in the garden appears shiftily. Soon after, it changes to an image of a radish planted in the garden at the back of the house. The imagined radish reveals a white skin about one third of the total root length above the earth. He can see the leaves also. He does not notice the tight clenching of his left arm with his right hand until he feels that it bears some resemblance to the experience of touching the radishes which he pulled out with his right hand in the garden a few days ago. Releasing his hand, the

radish root disappears, and the radish leaves only remain. Again clenching his arm, at first something like yellowing leaves of radish appear, and in the meantime many radish roots appear. Then radish roots and leaves all disappear.

INTERPRETATION. It is raining heavily all evening long, and still at bed time a pouring rain showers the roof tiles. He can hear the noisy rain showering the bamboo blades. When he hears the noise, he sees also the images of the trees or bamboos which are associated with the noise. The image frog is a tree frog which he saw a few days ago on an oak leaf. On the noon of that day, he observed a toad creeping about in the garden for some time. Then the grotesque form of the imagined frog is perhaps due to a fusion of the memory image of the frog and that of the toad. The images of the frog and bamboos appear for a long time, because of the heavy and endless rain. The radish images are responsible chiefly for the touch sense of the hand and arm. Now it may be inferred from these facts that the stronger the stimulus the more easily the image appears.

The above mentioned are some examples of the images settled into the completed forms. But other than these of the completed forms, the subject can see the formless images of light or color sensation only. Needless to say, "formless images," which are not altogether "shapeless." These images are shaped, but not formed concretely. One example of these formless images which he sees often is as follows:

EXAMPLE IV. In a drowsy state, at the moment when he hears a strong sound, a bluish flash appears instantaneously. He experiences the same phenomenon frequently in the drowsy state.

INTERPRETATION. By the sound, the light flash can be elicited. This phenomenon is a sort of synaesthesia. Because of the fact that this image appears instantaneously and has not a concrete or distinct form, it has nothing but a specific impression for observers.

SUMMARY OF PART I

From the above, we can conclude the following main facts.

1) When one sensory stimulus is given to a subject in a drowsy state, images of other objects associated with it often appear.

2) These images sometimes have forms, and sometimes are devoid of forms, only light and color being present. This phenomenon resembles the experience of color-hearing, and is called a new type of synaethesia by Bachen[1].

3) These images are sure to disappear when they are observed attentively, a passive attitude being necessary for the image observation.

4) The remarkable character of these images are such that elements of forms and colors of various objects have been disjointed and connected with each other in different relationships which construct new images.

5) The longer and stronger persistence of stimulus, the more easily and clearly conditioned images appear. Conversely if the stimulus is momentary, the recalled images appear also momentarily.

6) Not only the visual images but also the sensory images can be elicited in a similar way.

PART II

DECOMPOSITION AND FUSION OF MENTAL IMAGES IN THE POST-HYPNOTIC HALLUCINATORY STATE

In Part II, we have investigated whether a mental image in the post-hypnotic hallucinatory state is the same phenomenon as mentioned in Part I. Now, the term, "post-hypnotic hallucinatory state" which is used here, is a very strange one in the hypnotic literature. While it is undesirable to make new terms unduly in science, hitherto, no adequate term for the description of our pheomena appears in any papers.

ON THE POST-HYPNOTIC HALLUCINATORY STATE

When in the post-hypnotic "waking" state the subject is given again one stimulus which was already given to him in the first hypnotic trance, by the stimulation the subject falls into a sort of hypnotic trance – the second hypnotic trance or post-hypnotic trance –, in which he re-experiences and realizes hallucinatorily one or all parts of the scene of the first trance situation. The above mentioned stimulation is the most necessary toward induction of the second trance. Giving this cue, the subject falls into a trance state in a moment showing a characteristic sign, such as reported by Erickson (5) and Marcuse (11). On termination of the cue, he returns to the waking state from the hallucinating situation with post-hypnotic amnesia. In such post-hypnotic trance, if behavior, which was commanded in the original trance by the hypnotist, is carried out, we may call it a post-hypnotic behavior, and if the images, which were conditioned in the original trance by sensory-sensory conditioning, are hallucinated, they be called post-hypnotic images or hallucinations. It is necessary to differentiate a case of post-hypnotic hallucination from one of post hypnotic behavior, because of the fact that the former is more simple and easy to examine experimentally. Characterizing the post-hypnotic trance induced by a sort of visual conditioning procedure, one may use the term "post-hypnotic hallucinatory state" to indicate the specific state from which the post-hypnotic hallucination is elicited. And now, one may expect that the more the nature of hallucination becomes clear, the better the mechanisms and the natures of the underlying "state" can be understood.

EXPERIMENTAL PROCEDURE

Two rooms are used in this experiment. One is a hypnotic room in which the subject is induced into hypnosis as deeply as possible. The other is an experimental room in which are prepared some devices to give the subject various sensory stimuli. As above mentioned, in the main procedure at first a sensory-sensory conditioning is formed between the two stimuli, and then giving the one stimulus, the subject observes the image corresponding to the other stimulus. Of the two stimuli, the inducing stimulus is the conditioned stimulus (C.S.), and the stimulus corresponding to the images, the unconditioned stimulus (U.C.S.). In the experimental room, a white

screen (600 x 600 mm²) is set up at a right angle to the subject's forehead at a distance of 400 mm. At the center of the screen, an observing frame (100 x 100 mm²) is cut out to look into a figure (U.C.S.), which is drawn on a white card, over the frame. A white paper pasted upon an iron plate is pulled with a wire above the window frame between the screen and card. Slacking off the wire, the white paper comes down and covers all the frame against the subject. Then pulling or slacking the wire, the figure appears or disappears at the experimenter's will.

Attention must be paid to the fact that the one sound used before as C.S. in one pair can not be used once more as C.S. of the other pair for the same subject. Then various sound stimuli (buzzer, metronome, bell, and can, etc.) are used, as many as possible. But, for the sake of brief description in this report, only the buzzer and metronome are used representatively. First of the procedures, in the experimental room, is confirmation of whether the subject sees something like images or not on the white card, on which nothing is drawn. Then a sound, which is to be used as C.S., is presented. There was no subject who saw something on the card in this experiment. In the next, the subject is hypnotized as deeply as possible in the hypnotic room. Then, the deeply hypnotized subject is given the C.S. for 5 sec., and immediately after, U.C.S. for 5 sec. After such paired stimulations are repeated 4-5 times, the subject is given the amnesia-suggestion that he will forget all the events of the conditioning period completely. The existence of amnesia is checked,* the subject is taken again into the hypnotic room in order to be awakened. After awakening, it is confirmed again whether he can recall the events experienced in the trance, or not**.

Immediately after, or at each definite time, he is guided in his normal state (a sort of post-hypnotic waking state) into the experimental room where there is the same situation as that of conditioning but he looks at a white card only through the observing frame in place of the U.C.S., giving the C.S., it is checked whether he sees something on the card or not. When he sees something on the card, he is asked to draw it as accurately as is possible on a report paper which has the same size as the observing frame. Such C.S. presentation (and the image observations) are repeated 5 times per diem.

SUBJECTS: Deeply hypnotized volunteers (amnesia level) of the public junior high school, pupils aged 12-15 were used, 12 boys and 20 girls.

*When the experimenter asks the subject: "You are forgetting all of trance events, are you not?", the subject commonly says "yes Sir." But that is very doubtful in fact. Then the experimenter asks again "what did you see on the card?" or "did you see something in the frame?". Most subjects cannot answer such questions, showing amnesia of trance events, but some can answer or recall the trance events. For the latter subjects, the experimenter suggests more strongly and repetitively "you are now perfectly amnesic for trance events". In this experiment, there is no subject who does not show perfect amnesia for the conditioning situation when such procedure has taken place.

**If the post-hypnotic amnesia of the conditioning situation in trance is ineffective and subject can recall the trance events, he is induced to the deep trance again and given the suggestion of amnesia again and again. Four subjects out of 32 did not show perfect amnesia. For such subjects, the experimental procedures are also carried out in such state. Because of the fact that only some subjects see the hallucinatory conditioned images as differentiated from the so-called memory image, data of such subjects only were taken into the consideration of the results.

Many other subjects were used but excluded after consideration of the results.

EXPERIMENTAL PLACES: In the hygienic and special rooms of the Second School of Shimura, Itabashi, and Dowa School, Toshima, in Tokyo.

EXPERIMENT I

REVIVIFICATION OF IMAGE BY THE SOUND C.S.

PURPOSE: Firstly, confirmation of the basic characters of the phenomenon which is brought about in the post-hypnotic hallucinatory state by the sound C.S., which was conditioned before with U.C.S. in hypnotic trance.

CONDITIONS: Subjects are divided into two groups. As U.C.S., an X figure is used for the one group, and an ⓪ figure is used for the other. As C.S., a buzzer sound is used for both groups. The X figure is crossed at right angles at the middle of each of two lines 60 mm in length and 1.5 mm in width. The ⓪ figure is composed of the two concentric circles on diameter 40 mm and 14 mm.

SUBJECTS: The group which is given the X figure as U.C.S. is called the X group, and the one given the ⓪ figure is the 0 group. Both groups consist of 10 subjects (total 20 subjects).

RESULTS: Accompanying C.S., most subjects report they see something in the post-hypnotic hallucinatory state. Following are the main results of subjects' reports. In this paper, reports of irrelevant images to this situation are omitted.***

1) APPEARANCES OF IMAGES: Some examples of subjects' verbal reports on image appearance follow:

SUBJECT K.K.: "There is a dual circle of mercuric color on the card. The color is deeper than before (It is second time and she is comparing this with the first). Now I noticed it suddenly."

SUBJECT N.R.: "It is rising clearly to the surface like the clouds, I can not tell you where it is. It is as if painted on the card, or floating on it.... Now, I cannot see it (Just when the sound C.S. stopped), ... Now it comes up again."

SUBJECT M.M.: "It is hardly possible that I see something on the white card, I know. But I can see really an X figure. And it is very queer that I see the same figure only and not the other. It has dark and gleam color. Sometimes it appears and disappears ... It is very strange."

SUBJECT T.N.: "... Again it appears. Is it a white color against dark back? ... I wonder. I cannot tell you certainly. When I try to look upon it attentively, it goes out somewhere. I can not tell you where it is or whether it is really there or not. I wonder whether it is nothing but my feeling like seeing it or not."

SUBJECT Y.B. "... hearing the sound of buzzer, somehow I feel an image with a start of the buzzer – on ceasing the buzzer, I am surprised to learn that the image disappears. I feel that there is something more I can

***Only one subject out of the X group draws figures which one can not consider in terms of relations or connections called out by the experiment.

tell you, but I can tell nothing in reality. I saw this figure somewhere, I think, but can not recall where I saw it certainly."

SUBJECT I.I. (during the buzzer sound, he draws an O figure, but when it is over . . .) "I feel that I saw such figure, but I wonder whether it appears or not." (then the experimenter asks him whether he sees it in reality or not) "I wonder the figure appeared, it is nothing but my thought in which I saw such figure."

From the above examples of introspections, one can learn the fact that there are various levels of mental images from the character of vivid hallucination or perceptions as such, to memory images or ideas. The subject K.K.'s image is nearly a perception of a real figure, and we can not differentiate it from perception in his inner experience. But subject N.R. reports "rising to the surface," and "can not tell you where it is," and he does not sufficiently differentiate it from reality. N.R.'s image bears some resemblance to Katz's Flachenfarbe (7). Subject M.M.'s report "dark and gleam" bears some resemblance to subject K.K.'s. From subject T.N.'s introspections "I wonder," "can not tell you certainly," or "there is really or not," we can infer that his image is very obscure and very difficult to observe. Other than subject T.N., there are many subjects who reported the fact that the images disappear when they try to look at them attentively. And there are subjects similar to subject I.I. who feels as if he sees an image, during the buzzer, but when it ceases he can not have any image but only a feeling that "it is nothing but his thought." Subject I.I.'s is also an example in which he tries to focus the observation and the image disappears.

In all subjects, it is a common phenomenon that when given the C.S. an image appears suddenly, and when the C.S. stopped, the image disappears immediately. And yet, there is no subject who knows consciously his preceding experiences when he heard the sound and observed the figure associatively in the experimental room. Other than subject Y.B., there are some subjects who are aware of the fact that the image appears with the buzzer. But there is no subject who has previous knowledge of the conditioning procedure.

Of the examples, K.K. and N.R. show completely the deepest somnambulistic state on the Davis-Husband Scale (3), M.M. and T.N. have total amnesia or somnambulism and I.I. and Y.B. show a partial amnesia. It would appear as that there is a significant relationship between image clearness and the depth of hypnosis, but this relationship will be considered in other reports (14, 15).

2) DISTORTION AND DECOMPOSITION OF IMAGE. Study was also made of how much the images change their appearance and forms when the revivifications are repeated 5 times per day till the day on which the subject can no more observe any image.

Image clearness is classified in categories as follows: In "A" stage, the images are seen clearly and the reported image figures are the same as the original figures. In "B" state, the images appear vaguely and are modified as compared with the original figure, but at any rate some images can be seen. In "C" stage, no image appears.

Repetitive observations are made as to what state of image clearness the

subject does see and how he sees the modification of image at each time. There is demonstration of the shifting between each image clearness (above three degrees) with each time and each day (immediately after, and 1, 2, 4, 6 days after) from the conditioning procedure – original trance –) in Table 1. In the table, one finds that the images can be seen very clearly immediately after, but it is difficult for them to be observed very much one day after. There is only one subject who hardly sees them 6 days after. In this experiment, there is no subject who can see the circinate image reported by Leuba (10) ten days after. At any rate, this table shows that the effect which formed the sensory-sensory conditioning in a hypnotic trance, decays gradually day after day even as the common forgetting curve.

Table 1

U.C.S. figure	Degree of clearness	Days lapsed from the conditioning				
		Immediate	1 day	2 days	4 days	6 days
◎ figure	A	8	3	1	0	0
	B	1	4	4	1	1
	C	1	3	5	9	9
x figure	A	5	1	0	0	0
	B	4	2	2	1	0
	C	1	7	8	9	10
total	A	13	4	1	0	0
	B	5	6	6	2	1
	C	2	10	13	18	19

It is noteworthy how many modifications come about at each observation time by time. In Fig. 2, is shown the number of reported times of the day in horizontal and the number of days elapsed from the original trance in vertical. For example, subject A.D. (Fig. 2.A) reported immediately after that a vague image completely fused between the inner circle and outer one at the first observation, and a clear and distinct image similar to the original figure appeared at the third, fourth, and fifth time. Comparing the third image with the fifth one, we observe that both are forms similar to the original figure, but the inner part of the latter is smaller than the former (shrinking from 15 mm to 9 mm in diameter). On the next day, the first is a fused image, but the second and the third have the right forms, the fourth is a dual circle plus a circle which is the same size as the inner circle image, near the upper right side of the outer circle, and the fifth is the one of the fourth from which the inner circle disappeared, and the outer circle shrunk. On the third day (2 days after), he could not see any image the first time, he saw the distorted image the second time, and the right images the third and fourth, reporting the designed images which are composed of a main circle and eight small circles around it. On the fifth day (4 days after), the tendencies of the distortion, decomposition, and shrinking are more notable. At the seventh day (6 days after), the main circle disappears and eight small circles remain.

As to the subject K.K.'s report, there is little distortion or decomposition of images but the general image is vague. Immediately after the experiment,

the first image is very vague and obscure, the second and the third are clear, but the fourth and the fifth become again obscure time by time. On the next day, the first and the second have a vague inner circle, several of which form a darkened shadow. The third, the fourth and the fifth have a clear inner circle respectively, which decreases in size with time. On the third day, at the first report, she can not see any image; at the second, she sees a dark circle, the inner circle. At the third, he sees an outer clear circle and a dark inner circle; and at the fourth, sees the outer circle only without the inner one. We shall omit the subjects M.N.'s and T.K.'s reports because they are similar to above-mentioned examples.

From the above examples, we can infer a fact that at the first and the second observations on the same day, the image is not sufficiently clear, but at the third and fourth, it changes gradually to a clear one, and from then on its clearness decreases with time. It is a very interesting fact that the behavior of the inner circle differs from that of the outer, and the former appears more clear and darker than the latter, and moves in or out of the latter. It is expected that a modified image may be explained by a principle of decomposition and fusion of the original mosaic image, but this principle will be discussed at another opportunity.

When the images reported by all subjects are classified according to their similarity, and their characters abstracted, Fig. 3a is obtained from the ⓪ group and Fig. 2b from the X group. Firstly we describe the ⓪ group. Each one of the "vague" images is a circle or circles, but a very vague one without the inner circle or with a dark circle. In the "decomposed" images, the inner image and the outer one have the same forms as the original figures respectively, but the behavior of inner and that of outer are not the same, and relationships of both circles are indifferent, and then the image is decomposed as a whole. In the decomposed images there are two characteristic groups. In the one the inner circle is "isolated" from its original position to the outside of the outer position gradually, and in the other, many similar circles are "joined" to the original figure. The distorted images have some distortion comparable with the original figure. In the "distorted" images and "fused" ones, we can not say definitely whether the distortion of image is in the direction of the distorted clear image or the right vague image.

Next the X group is considered. These are classified according to the six types of image as shown in the Fig. 3b. It is not necessary to speak of the vague, decomposed, and distorted images which were already mentioned in the previous group. In the "shedded" images, a part of one original figure is shedded from the original one. In the "annexed" ones, a part is annexed to the original one. The "scattered" images are the ones which hold the original form in each individual image, but some small images scatter about a main image regularly or irregularly.

EXPERIMENT II

COMPOSING TWO MENTAL IMAGES BY TWO SOUND C.S.S.'s

PURPOSE: After the two paired conditioning procedures in which each two figures (U.C.S.1 and U.C.S.2) are conditioned respectively to the two

sounds (C.S.1 and C.S.2) during one trance, it will be observed whether an image corresponding to the paired figure appears or not, when one of two sounds is given; and whether a response corresponding to two images appears or not, when the two sounds are given at the same time.

CONDITIONS: A buzzer as C.S.1 is conditioned to the figure as U.C.S.2, during the one trance respectively. The figures are the same ones used in Exp. I. The presentations of the stimuli are at random. The numbers of paired presentations are eight, respectively. All the other conditions are the same as in Exp. I.

SUBJECTS: All subjects are the good image observers selected in Exp. I, and are experimented on the day after a lapse of two weeks from Exp. I.

RESULTS: In this experiment, the images can appear as in Exp. I. All subjects are classified according to four groups following the image appearances; in the first group, they can see an X image in response to the buzzer and a ◎ image in response to the metronome, respectively, without confusion between the two sounds. The second group can see two images, but confuse two pairs with one another. The third group sees only one figure and can not see any other image completely, and the fourth group can see no image. Table 2 shows the number of subjects in the four groups on each day. This table illustrates the fact that many subjects see two images without confusion immediately after presentation of the stimulus, but as time goes by, the number of subjects, who see two images with confusion, only one image, or no image, increases. Such tendency is the same as in the case of single image observation.

Table 2

Degree of correct recall	Days elapsed from the conditioning period			
	immediate	1-day	2-days	4-days
correct recall	6	4	0	0
mingling recall	5	6	2	0
single recall	1	1	2	4
no image	0	1	8	8

The examples of composed images reported by the subjects are shown in Fig. 4 a-c. The typically composed image is shown in Fig. 4a. When C.S.1 is given stronger than C.S.2, then the image corresponding to U.C.S.1 appears more clearly and distinctively than the image corresponding to U.C.S.2, and vice versa. These relationships are shown in Fig. 4b which delineates the clear images and vague ones by the thick lines and thin ones as subjects report them. With regard to these responses, all subjects can be classified into four groups. The first group includes the subjects who see the images as shown in Fig. 4b, consisting of a clear image and a vague one corresponding to the strong sound and the weak one respectively. In the second group, the subjects see a composed image but do not perceive the clear-vague relationship correctly. In the third group, the subjects see the mingled images consisting of two sorts of images without differentiation between the two kinds of stimulations. Not only do they not differentiate between strong and weak, but also between the types of stimulations, C.S.1 and C.S.2. The fourth group includes two sorts of subjects, the ones who do not

see any image, and the others who see one sort of image but not two. Table 3 shows the number of subjects in the above four groups with the lapse of time. The table demonstrates the fact, that immediately after conditioning, there are many subjects classed in the first group, but as time goes by, the subjects are shifted more and more to the second and third. At the end, the majority is classified in the fourth group. Giving the one C.S. only, the mingled can elicit one composed image made of two images, and giving the two C.S.'s, the mingled images, as shown in Fig. 4c can be elicited in the same way.

Table 3

Degree of differentiation	Days elapsed from the conditioning period			
	immediate	1-day	2-days	4-days
Differentiatively overlapped image	5	2	0	0
overlapped image	6	2	1	0
mingling image	0	5	3	1
one or no image	1	3	8	11

It is worth considering the nature of mental images in general, since two images can compose a new image, and because of the fact that a complicated image can be composed of some simple or partial images at will. In Exp. I is demonstrated the fact that a double circle can be decomposed into two single circles and an X figure to some components. In Exp. II, seeing the same fact from the other side, one may make clear the structuring process of elemental images. If such phenomena can be proved exactly in further image experiments, one should be able to expect a serious amendment of the theories of perception and memory, especially of Gestalt principles.

EXPERIMENT III

COMPOSING TWO MENTAL IMAGES BY TWO VISUAL C.S.S.'s

PURPOSE: In Exp. II is demonstrated the fact that given two sorts of sounds as C.S.'s, a composed image made of two images from two C.S.'s in relation to each other can be produced. Whether the same phenomena as in Exp. II can be observed even when two visual C.S.'s are used, is next examined.

CONDITIONS: The same X figure and ◎ figures as used in Exp. II are used as C.S.'s. Two coloured papers are used, of which the one (C.S.1) is a red square (10 x 10 mm²) pasted on a grey square (100 x 100 mm²) at the center, and the other (C.S.2) is a green square (25 x 25 mm²) on a grey square of the same size as the red stimulus ground. The red square is conditioned to the X figure (U.C.S.1) and the green square (C.S.2) is conditioned to the ◎ figure (U.C.S.2) in one trance.

At the conditioning period, the U.C.S. is presented in the observing frame and the C.S. is placed at the right side of the frame, as shown in Fig. 5A. In the image observation period, the frame is white, and the C.S.'s are around the frame at each position as shown in Fig. 5B.

SUBJECTS: Three subjects – K.R., N.R., and M.M.

RESULTS: Because of the fact that the images reported by the three subjects bear some remarkable resemblances to each other, it may be enough to mention only one case. N.R.'s images are shown, as an example, in Fig. 5B, in which the upper column shows the relative position of C.S.'s to the observing frame; the middle column, the reported images; and the lower column the experimental order. At first it is observed that when a single visual C.S. is given to the original position, the image corresponding to the U.C.S. appears correctly as shown at "1" and "2" in Fig. 5B. Therefore, the images can be produced by visual-visual conditioning the same as by visual-auditory conditioning. The "4" shows the images when two C.S.'s are presented at both sides of the frame. These two images are differentiated from each other in a way that corresponds to the individual presentations of two C.S.'s. N.R. reports without any suspicion that he sees two separate images in the frame at the distance between two images as shown in "4." But if it is true, the two images cannot rest in the frame because of the fact that the distance between the two images is greater than the size of the frame. It is a distinctive characteristic of the post-hypnotic hallucinatory state that the subject does not notice such irrationality. From these phenomena it may be said that the image bears not only sensational characteristics but also characteristics of memory image which are determined by meaning. When two C.S.'s approach each other, the images approach also as *"6"* and *"7"*. In the end a specific phenomenon is noted in which, when the positions of two C.S.'s are changed from "6" to "8" via "7" gradually in front of the subject, a double image appears in "8". At the position of C.S. "8", the image appears commonly as "1", but when the subject knows of the overlapped C.S.'s, two overlapping images appear. It may be inferred from this phenomenon that some images correspond to the subjects' inner context or set, derived from its meaning. This inference will be discussed at another opportunity.

EXPERIMENT IV

IMAGE CORRESPONDING TO COMPLEX FIGURE

PURPOSE: To investigate more complex figures.

CONDITIONS: U.S.C. 1 is a meaningful figure as shown in Fig. 6A, and U.C.S. 2 is a complex figure as shown in Fig. 6B. C.S. 1 is the buzzer and C.S. 2 is the metronome. All other conditions are the same as mentioned above.

SUBJECTS: Four subjects – K.K., N.R., A.K., and M.M.

RESULTS: The two subjects (K.K. and N.R.) can report the correct images corresponding to the original figures in a fairly detailed fashion.

In the case of U.C.S. 1 (Fig. 6A) K.K. draws a recalled figure, saying "here is such a line" or "such a curve appears here". When the buzzer sound is stopped, she does not draw anything, exhibiting a vapid expression on her face. When the C.S. sound is given once more, she begins to draw the figure continuously again. When the experimenter asks the subject what figure she can see, she cannot answer meaningfully, but when the drawing is com-

pleted, she says "ah, it is a figure of a woman", recovering her normal consciousness. One of the examples of her art is shown in Fig. 6C. Two other subjects (A.K. and M.M.), understand the meaning of the image from the beginning, but cannot recall the shape or number and relative positions of individual lines correctly. With the U.C.S. 2, one observes the two characteristic differences in image recall. K.K. and N.R. copy each line one by one from top to bottom. A.K. and M.M., however, first make a diamond shaped plan on the report paper, then place some lines within the diamond frame. The first two do not err regarding the number of lines but the latter two err on number and position. Yet K.K. and N.R. are induced into a deeper trance than A.K. and M.M. Furthermore, this difference may not be attributed to the differences in intelligence, since on the Tanaka – B Form Group Test of Intelligence (16), K.K. has a standard deviation (T-scale) of 70, N.R.–58, A.K.–67, and M.M.–53.

From these facts, a conclusion may be drawn to the effect that there are two contrasting types of image-recall; i.e., one is the understanding type (meaning as a whole), and the other is a rote type (additive mosaic). The latter recalls and dreams a more clear and detailed image than the former. The reason for this difference in recall types is as yet unclear, but a hypothesis may be advanced to the effect that it is caused by a difference in hypnotic depth. When the subject goes into a deep trance, and he maintains high hypnotizability, then he also maintains a high conditionability. It then becomes possible to form strong conditioned responses. If this inference holds true for this experiment, the differences in the post-hypnotic hallucinatory states induced by the C.S. will be striking. That is, the rote type will recall the image more clearly and vividly than the understanding type in the post-hypnotic hallucinatory state, wherein the conditioning mechanism is settled and subconscious. However it is still too early to draw such an inference in this paper because of our inadequate knowledge regarding these phenomena.

EXPERIMENT V

SENSORY-SENSORY CONDITIONING IN THE NORMAL STATE

Up to this point sensory-sensory conditioning experiments in the hypnotic state have been discussed. As mentioned in Part I, such conditioning may be accomplished naturally in the normal experience of a drowsy state. Such conditioning in the normal state may also be brought about experimentally. Mowrer (12) reports a shock sensation measured by GSR in the non shock intervals after the electric shock given at uniform time intervals. Elson (4) succeeded in conditioning a sound to a light. Corn-Becher, Welch, Fisichelli and Toback (2) reported on so-called abstract conditioning. On the other hand, there are some reports which deny sensory conditioning. Kelly (8) could not succeed in forming a conditioned bond between a sound and a colour at even 3000 trials. Cason (6) also reported negative results.

As mentioned above, the problem of sensory-sensory conditioning in the normal state has not been satisfactorily solved up to the present time. However, considering our observations of the drowsy state, and experiments in

the post hallucinatory state, it is suggested that considerable possibility for such normal sensory conditioning exists, which is open to experimental attack.

SUMMARY OF PART II

The chief results of Naruse's experiments with the various subjects are as follows:

1. When one stimulus (C.S.) is given in the normal waking state after a conditioning procedure in which a conditioned bond is formed between two sensory stimuli in deep hypnotic trance, a mental image corresponding to the other stimulus (U.C.S.) appears with amnesia for the conditioning situation. When the stimulus is removed, the image also disappears.

2. The images attained have various degrees of clearness which may be classified on a continuum from hallucinations to memory images.

3. Such images tend to disappear when subjects try to observe them attentively.

4. Images which are broken into elements of the original figure appear as distinct images.

5. Modifications of images may be made by distortion, vagueness of the image, and by decomposition of the image.

6. When two C.S.'s, which were already conditioned individually to two U.C.S.'s are presented at the same time, the images corresponding to each stiumlus appear to overlap. This is the composed image.

7. In image composing, which involves the strong-weak stimulus relationship or the spatial positions of two C.S.'s, the clear-vague or positional relationships of the composed images are changed.

8. In the complex of meaningful images, there are two types, primarily. The one grasps the image as a whole, the other observes it in many mosaic elements. The latter can recall the original figure more correctly in an image form than the former.

9. Some positive and negative reports on sensory conditioning in the normal waking state are reviewed.

DISCUSSION

Comparing Part I with Part II, some similarities are found to exist. It may be said that these are two different phenomena arising from the same process under two different conditions. An attempt is made to consider these phenomena together. The fundamental character of these image originations is that many image components, of which the whole image of an object consists, can be decomposed to individual component images or fused to a more complete image in the drowsy state as well as in the post-hypnotic hallucinatory state.

In normal perception, an integrative function operates on image components, and an elemental or decomposition process is concealed behind the function of integration. But when the integrative function relaxes,

as in the case of a drowsy or post-hypnotic hallucinatory state, then the phenomena of decomposition and fusion may be easily observed. Such phenomena must be accepted as fundamental facts for the understanding of psychological processes. If it is insisted upon that a whole process is the fundamental mechanism of all psychological phenomena, as the Gestalt psychologists say, then these findings about image modification cannot be understood correctly. From this point of view, a grave criticism of Gestalt theory is made.

As stated above, not only is the integration mechanism of the formation of images under discussion, but also the other activities of the human mind. It is the contention of the authors that the lower activities of the human mind are controlled or integrated by higher psycho-physiological activities. The image phenomena which are discussed in this paper may be explained fairly well by this hypothesis.

It is observed that in the drowsy or passive state, the image associated with a sensation can be elicited spontaneously, but when the subject strives to observe it attentively, the image disappears. This fact may be explained by assuming that the attentive function is above the brain layers responsible for image formation, and that the upper layer inhibits the lower one. This hypothesis leads to an understanding of what happens in the drowsy state. The lower layer which controls image functions becomes active because of the relaxation of the upper layer. This also explains the fact that when a sound can not yet be perceived, the images may yet appear easily. That is, the perception of sound inhibits the activity of image function, for perception is not a simple sensation or image activity, but a complex function involving higher levels of psychological activity. When the sound cannot be perceived in the drowsy state, the image layer functions actively because of the relaxation of inhibition. The fact that when the eyes are closed the image appears easily, can be explained the same way. The dream in sleep is an example of the same process.

One may interpret the case of the images in the post-hypnotic hallucinatory state by this hypothesis too. Of the two centers in the lower layer under discussion, one is the center for sound or visual images (C.S.) and the other is for figural images (U.C.S.). One bond between the two centers is formed and reinforced by the conditioning procedure in the trance. In the normal state, the activities of such centers and bonds are inhibited by higher cortical activity. Giving the C.S. in the post-hypnotic hallucinatory state, the upper layer is weakened and the lower shows increased activity. The stimulation of C.S. brings the C.S. center in the lower layers into play, and the U.C.S. center is brought into play by the impulse sent from the C.S. center through the bond. Such activation of the U.C.S. center is the conditioned image in our experiments.

This discussion and hypothesis is still more suggestive than complete. However, the authors believe that this outline of their concept will stand for the most part. The concept may be called the "Integration" or "Hierarchy" theory of image formation. By future verification of image experiences, it may be expected that a more clear and adequate theory will be formulated.

Fig. 1.

(Sub. A.K.)

time per day / elapsed day	1	2	3	4	5
immediate					
1-day					
2-days	non				
4-days	non	non			
6-days	non	non	non		non

Fig. 2A.

(Sub. K.K.)

time per day / elapsed day	1	2	3	4	5
immediate					
1-day					
2-day	non				non
4-day	non	non	non	non	non
6-day	non	non	non	non	non

Fig. 2B.

(Sub. M.N.)

time per day / elapsed day	1	2	3	4	5
immediate					
1-day			non	non	
2-days	non	non	non		

Fig. 2C.

(Sub. T.K.)

time per day / elapsed day	1	2	3	4	5
immediate	non			non	
1-day	non	non	non	non	non

Fig. 2D.

vague	
decomposed	
distorted	
fused	

Fig. 3A.

vague	
decomposed	
shedded	
distorted	
annexed	
scattered	

Fig. 3B.

Fig. 4A.

Fig. 4B.
metronome - - - weak
buzzer - - - strong

Fig. 4B.
metronome - - - strong
buzzer - - - weak

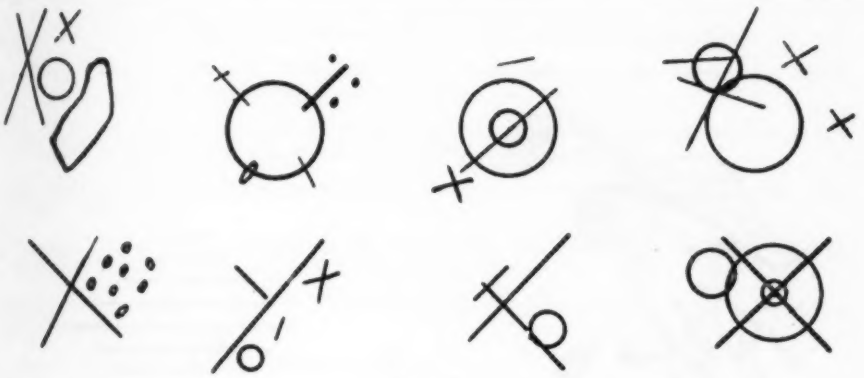

Fig. 4C.

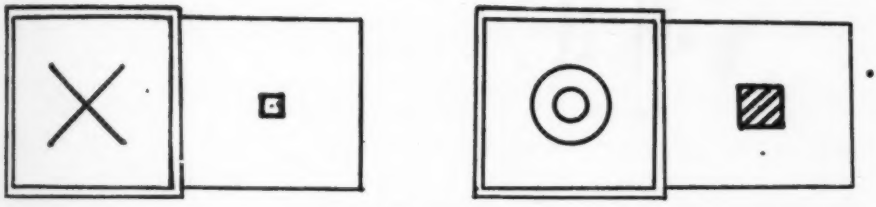

Fig. 5A.

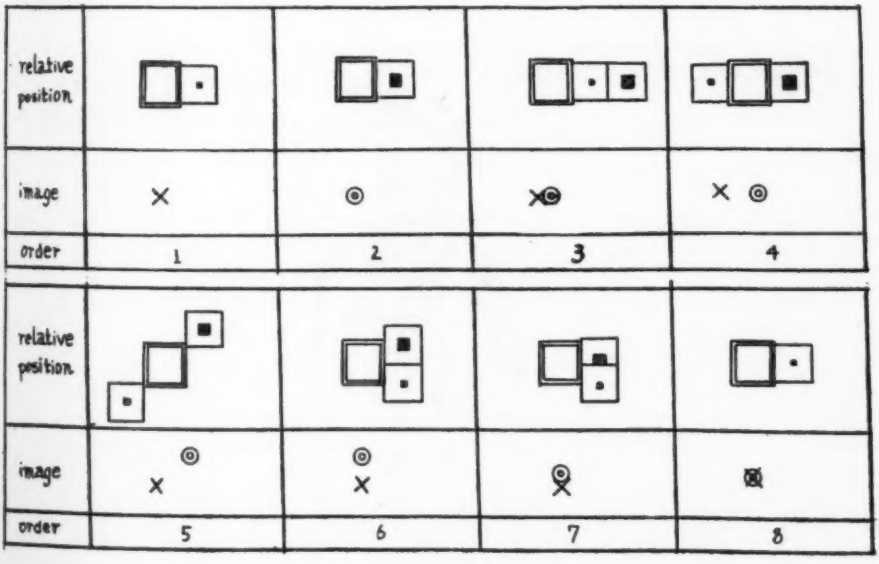

Fig. 5B.

Fig. 6A.

Fig. 6B.

Fig. 6C.

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A New Theory of Hypnosis

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It is a surprising fact that, as Schneck (9) has recently noted, there is as yet no adequate theory of hypnosis. We do not agree entirely with the reasons offered for this lack by Blankfort (4), but suggest that the main causation has its basis in the absence of a proper relationship between the language used to describe the phenomena and the neurophysiological events which must, of necessity, underlie the overt events. We cannot approach psychological truth by continually circling round phenomena at a safe verbal distance. We would agree with Schneck that a valid theory must be: (1) in terms of the *basic* ingredients of hypnosis; (2) biologically framed at the simplest possible level. But we would point out that to say that, during the onset of the hypnotic state, "the individual moves in the direction of functioning approaching the most primitive level of psychophysiological awareness of environmental-individual differentiation" tells us little about the manner in which this might occur, apart from the possible validity of the concept. Similarly, Arnold's (2) theory is "reasonable" but fails to be explanatory. It *does not mean anything* to say merely that "the individual is actively striving to imagine what the hypnotist describes" for a truly scientific (and valid) explanation we need to know what the word "striving," "imagining," and "describes," mean. As for earlier theories, of what possible scientific value are "explanations" in terms of clairvoyance, ideomotor action, reflex arcs, nervous sleep, phrenology and unconscious love (7). It is, indeed, an appropriate time for a basic theory of hypnosis framed in modern scientific terminology.

"Suggestion" as Basic Input Effect

We aver that hypnosis has been present since the days when living matter originated in the primaeval mud. It arises, basically, whenever the organism reacts on an input "suggestion" from the environment. However, hypnosis, as a "special" form of suggestability, is mainly based on a semantic input basis and even here only on an effective command basis when the organism can produce its own semantic feedback. Note that animals exhibiting what Scott (10) terms et-epimeletic behaviour*, can operate on a non-semantic basis yet through the distal sensory systems (visual/auditory/olfactory). Basically suggestion is thus defined as an effect of stimulus patterns within the available neural mechanisms. It is the nature of this effect which has rendered hypnotic phenomenon mysterious due to our past ignorance of internal events and processes. Hypnosis is defined as a special kind of suggestion effect mediated through the secondary signalling system. We use the latter term to refer to the semantic neural representations (1) or sensory orders (6) which are established through the distal sensory systems by experience. Any stimulus is thus a suggestion from the environment but whether it is

*i.e. behavior which arouses the satisfaction of needs by others.

acted upon depends on the ongoing sequence and the previously established sensory order. This is what we mean when we talk of "meaning." Hypnosis is the process of creating circumstances suitable for the "acceptance of suggestion."

Biological Mechanisms in Hypnosis

We may now begin a consideration of the biological mechanisms acting as a basis for the hypnotic phenomenon. Any input pattern e.g. a word seen or heard, or a visual or auditory pattern, or a kinaesthetic/proprioceptive rhythm) will have a neural effect depending on a number of factors including: (1) the receptive state of the relevant priming circuits; (2) the "context" or place of the stimulus pattern in an ongoing afferent pattern, and, (3) the state of development of the relevant sensory order (or neural representation pattern). When we say that a stimulus or stimulus pattern (e.g. the word CHAIR) has a meaning for us, we infer that there is already established, such a representation for assessing the potentialities of the input pattern. The context may prevent or facilitate the "perception" of "meaning." For example, a nonsense syllable may have "meaning" if sufficient time is available between presentations for neural sorting/finding of the scanned elements, as the input pattern is compared with a series of established patterns of sensory orders.

In human hypnosis, we have semantic input patterns on the basis, firstly, of the intermediate visual/distal mechanisms and these, in their turn, are formed in the organism on the basis of the primary patterns, mainly of kinaesthetic/proprioceptive origin. The latter carry the basic neurotic potential* which is soldered in to the organism's neural circuits from the earliest movement stages, i.e. when sequence blockage and/or nociception may be incurred. Movements arise, basically of course, from tissue needs, and when the movements are "frustrated" then there results thalamic outburst as shown in theta rhythm. In the waking state the visual/distal system will intervene, on the basis of chronological conditioned experience, between the secondary signalling system (semantic) and the original (primary) sleep state. Readers who are unfamiliar with the concepts of "wakefulness of necessity" and "wakefulness of choice" should consult Kleitman (8). Sound neurophysiological evidence (5) is now available for the basic paradigms of Kleitman's theory, i.e. the basic state of the organism is the sleep state.

The Hypnotic Effect

Having briefly outlined some of our working concepts, for which there is considerable evidence, but which we have, unfortunately, inadequate space in which to express them, we may now proceed to take an example

*We have explained elsewhere how this potential develops on the basis both of statistical overlay of nociceptive experience and on the basis of soldering within the thalamocortical suppressor system. Suffice it to say here, that the greater the neurotic potential, which is built up on the basis of the innate autonomic reactivity, the less free repressor potential remains for coping with environmental stress of trauma.

of a hypnotic procedure in order to explain the events scientifically. Let us take the so-called method of trance induction by hand levitation. Many of the principles will be more widely applicable but this is a sound and relatively simple method of "trance" induction. The patient is, by means of input patterns in the second system, "asked" to lie down. Then follows a period of "relaxation" in which the various muscular systems are commanded to relax and in which the semantic input (from the experimenter) is referred to the relevant neural representations of the subject, at the same time as there is considerable stimulus or input reduction. The result of relaxation is that due to neural contiguity with stimulus reduction ("relaxing") the semantic input as externally impressed gains a certain degree of control. We must also include White's (11) formulation that, as he puts it, the subject may wish to act as he thinks a hypnotized person should act. In our terms, the waking situation containing patient and subject is more stressful for the subject in the presence of the experimenter, and he (or she) therefore obeys the commands in order to reduce this stress. There is obviously partial general validity for White's explanation of hypnosis as evidenced by hysterical phenomena when the patient's anatomical signs are those of the ignoramus. When, for example, the hysteric has seen an epileptoid seizure, the hysterical symptoms are then carried out more accurately. In other words, the patient then knows how to act in a certain way.

The result, both of the general situation and assurances, and the "commands" to relax systematically, is that the semantic input patterns gain a certain degree of control over those of the patient. At the same time the relaxation ensures that there is reduced input priming of the corticothalamic circuits as overtly measured by e.e.g. change. The hypnotic state is only a partial sleep state, however, as environmental contact is maintained through the secondary system and its conditioned connections to the primary system. In other words "words" gain control over movement sequences and these "words" or commands become those of the experimenter. The experimenter, further, gains some degree of control of the upper semantic hierarchical level of the chains for action command within the neural substrate of the subject. The normal postural adjustments are unaffected and the main kinaesthetic input continues to prime the waking mechanism. The subject is not asleep as evidenced by presence of reflexes and other routine physiological indicants.

The Hypnotic Procedure

Having relaxed, as far as possible and dependant on the degree of training and doctor-patient relationship, we now begin the hypnotic procedure. The subject is "asked" to place his hands across the abdomen and then to "concentrate" on them. What does this instruction mean, neurophysiologically? We suggest that such stimulus patterns as the words "attend" or "concentrate" have served in the past in conjunction with postural changes and in direction or regard. Thus conditioned patterns will be established within the organism which will act as an aid and accompaniment to a process of "mental" narrowing of attention. On the basis of our

reinterpretation of Bartlet's (3) case of temporoparietal tumour, we believe that semantic/meaningful patterns have tertiary relays within the temporoparietal circuits and that "attention" acts to focus or narrow the differential operation of these through conditioned mechanisms.

Having been asked to concentrate on his hands, and then either the right or the left hand, the patient will reactivate the neural representations of these schematic/kinaesthetic projections. Now comes the crucial part, as two events will take place (in this procedure) which we will term "necessary events" as they are unavoidable: (1) There will be a tingling sensation from the hand which is "concentrated" upon. The input from the hand will be present normally but the neural change in response to the verbal command will ensure that the input has greater neural effect. It is as if the neural circuits were able to inhibit all but a certain position. (2) The fingers of the hand will move differentially. It is obviously impossible for the organism to maintain exactly equal pressure when relaxed.

Onto these necessary events we now impose semantic input "suggestions" which become accepted in the face of neural "proof." In other words, we accompany the necessary events by ontiguous verbal/semantic input. The patient is told that (a) "Your hands are beginning to tingle . . . your fingers are moving . . . your hand feels lighter, etc., etc." (b) "Your fingers move one by one . . . do you feel them moving . . . your fingers feel lighter . . . they rise one by one . . . the hand feels lighter, etc., etc." Thus in the process of hypnotic "suggestion" we continually feed in the appropriate signals to accompany the necessary events, and the semantic commands begin to relay in continuous developing fashion. All these events are accompanied by a soothing, but nonetheless definite, chain of command, and as the arm begins to "float" (a most useful word this) the next series of repeated instructions ensure that "the arm will begin to move, move towards your face, it will touch your face, it will gently touch your face, etc., etc." Subjectively, at the moment of contact of hand and cheek, the patient experiences a "disembodied" member which has seemed to float of itself through the air. A considerable number of efferent discharge patterns and feedback reception relays, are, of course, in play during the guiding of the arm movement or aerial "floating," but psychologically we say that the patient has not "willed" the movement. Such terminology is useless for scientific explanation. All that we have done is to break through into the patients secondary signalling system on the basis of contiguity between our outer semantic commands and certain necessary events. It is, of course, vitally necessary to prepare the patients well prior to the occurrence of these vital events but, once this stage has been achieved, the progression into "deeper" levels is relatively simple.

Final Comment

We have only space in which to present the basic notions of a "new theory of hypnosis" but, despite the newness of its terminology, we feel that it will stimulate research. We sorely need knowledge of basic processes which underlie those so glibly explained by psychologists. As a psychologist

myself, I daily see the effects of suggestion, apart from clinical work, as students easily accept facile verbal "explanations" of psychological phenomena. We hope that this present paper will take its place in the reversal of this trend and that "psychological" phenomena will meet with scientific explanation and not merely verbal/mathematical overelaboration.

Summary

A new theory of hypnosis was suggested on the basis of interaction between the neural representations of the primary and secondary systems. It was suggested that the hypnotizer was able to integrate his own semantic commands into the neural representations as previously conditioned within the brain of the subject from past experience from semantic visual/auditory distal invariants. This was done by input contiguity between the verbal "commands" or "suggestions" from the experimenter accompanying stimulus or input reduction and the later "necessary events." We realize that our terminology is "new" (or may seem new to some) but the older terminology is largely anthropomorphic, and certainly does not offer explanations of psychological phenomena, such as hypnosis.

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Book Reviews

Rosen, Harold, *Hypnotherapy in Clinical Psychiatry*. New York: The Julian Press, 1953. Pp. xii–313. $5.00.

This clinical volume is introduced as a study of cases treated under hypnosis. The author, at the outset, makes it clear that his goal is psychotherapy under, not by, hypnosis. He then proceeds to teach by a variety of detailed case protocols, analyzed and interpreted. For example, he begins with a case of focal epilepsy wherein psychiatric evaluation and the use of hypnosis enabled the therapist to save the patient, a hysterical case, from unnecessary brain surgery.[1] In treating this case, Rosen made use of automatism, the theatre technique, and hypnotic intensification of an emotion. These three approaches have found imaginative and effective use in the hands of the author of this volume. The technique of automatism provides for "free" action of a part of the body as in automatic writing. The theatre technique focuses the patient on an imaginary screen whereupon is visualized the essence of a given conflict or situation. Intensification of an emotion, of course, involves just what the name implies.

With his usual dramatic and driving style, Rosen presents case after case in detailed dynamics. In each section, hypnosis is a condition which, when properly manipulated, leads to an enhancement of therapeutic procedure. It is never a substitute for psychotherapy as such. A case of pruritus vulvae is presented in detail. This difficult dermatological-gynecological problem is examined psychodynamically and it is clearly demonstrated that cases of this kind, with pronounced sado-masochism, cannot be dispensed with by the use of ointments alone. It is gratifying that an awareness of the psychogenesis of various skin conditions has been progressing. Indeed, many dermatologists have yielded recognition to the multiplicity of etiological factors operating in pruriginous lesions among others. That emotion can be one of these is, at least, a current area for lip-service. In Rosen's patient, pruritus and scratching as a form of skin masturbation veiled a self-destructive angry throat choking behavior. A direct removal of the activity described could certainly, in the absence of careful psychotherapy, precipitate disastrous circumstances.

A case of sudden incapacitating stutter gives further evidence of the sundry problems amenable to therapy under hypnosis. Here is a case with difficulties in a variety of areas – racial, sexual, etc. The acting out and abreaction of emotions and experiences points up the dynamics of this complex picture. This patient, after brief hypnotherapy, has lost her stammer and has been able to complete normal school, function as a teacher effectively, and voluntarily apply for intensive psychotherapy. A discussion of the Rorschach picture adds to a valuable record.

[1]Recent workers have proposed a hypnotic test to differentiate epileptic from convulsive-like seizures (Cf. Summer, J. W. Jr., Cameron, R. R. and Peterson, D. B. Hypnosis in differentiation of epileptic from convulsive-like seizures. Neurology. 1952, 2, 395-402).

In a section of comments, Rosen discusses the patient's sexualization of the hypnotic procedure and points out that sexuality may be utilized for the expression and channelization of aggression and underlying hostility. The existence of resistances and reactions to hypnotic situations, can be dealt with effectively and are accessible to therapeutic handling. Rosen's comments are considerably in agreement with those of other therapists using hypnosis.

Part II of Rosen's volume is a section dealing with consultation problems wherein the role of the psychiatrist is blended into the routine problems of internal medicine and surgery, problems, however, which have a devastating emotional substrate. The first section (under Part II) deals with gynecological problems. This area is one which has long been known as a borderland for psychosomatics, albeit in the advent of specialization much sin of omission has occurred. It is noteworthy that recently two volumes have devoted themselves entirely to the patient with "female trouble" and obstetrics.[2] Rosen presents a case of metro and menorrhagia and case data on frigidity and dyspareunia. He likewise, gives careful evaluation of patients with hysterectomy and polysurgery. Appropriately, the author stresses the large number of surgical procedures carried out to relieve pain apparently caused through psychoneurotic involvement. The comments on the emotionally sick physician, as a problem in arriving at good therapeutic procedures, are deserving of praise. This reviewer, among others, has in recent times instituted research in the area of physician behavior. The situation presented in Rosen's discussion emphasizes the kind of "sabotage" a physician may introduce into a case as a result of his own problems.

Differential diagnosis of psychiatric from surgical conditions, in a world of polysurgery, is of the utmost importance. The hysterical experience of pain and multiple signs and symptoms at least make one aware of the potential scope of disorders mimicked by hysteria. Several cases of this nature are presented by Rosen, as is also a case of apparent Meniere's disease.[3] In the latter, the therapist elicited, under hypnosis, marked abreactions of battle disaster. Fortunately, surgery was avoided. The dynamics of polysurgery are carefully discussed, and the rest of the chapter deals with conditions, hypnotically examined, which contraindicated elective surgery and with problems of an emotional nature that might interfere with smooth post-operative convalescence. This section further outlines the need for routine psychiatric evaluation of all surgical cases, both pre and post-operatively. The meaning of surgery to any patient may have more than cursory importance and evaluation gives understanding to the attending specialists so that a realistic cure may be effected.

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[2]Kroger, W. S. and Freed, S. Charles. Psychosomatic gynecology. Philadelphia: W. B. Saunders Company, 1951. Wengraf, F. Psychosomatic approach to gynecology and obstetrics. Springfield: Charles C. Thomas, 1953.

[3]Recent evidence has revealed possible psychosomatic etiology in Meniere's disease. (Cf. Fowler, E. P. and Zeckel, A. Psychosomatic aspects of Meniere's disease. J.A.M.A. 1952, 148, 1265-1268).

Control of pain by hypnotic methods is then described and analogy is made, albeit superficially, with lobotomy. Use of hypnosis in the intractable pain of carcinogenic metastases is shown to have a more evanescent but less devastating effect. Rosen emphasizes the value of hypnotherapeusis of pain when there are dynamic factors intensifying the condition. There is, however, as far as the reviewer is concerned, little doubt that hypnosis has utility even in organically founded pain with minimal psychodynamic implication per se.

There is some attention given to problems of hypnotic anaesthesia and brief reference to some of the research studies. The chapter concludes with an admonition from Raginsky that "one should be as careful with the psychologic scalpel as with the surgeon's scalpel, and no one less trained in the use of the psychologic microscope than in that of the bacteriologist or pathologist." Rosen emphatically maintains this position throughout.

The third part of this volume considers various specialized hypnotic techniques in their relationship to radical therapies and the aspects of emotional manipulation and abreactive technique. Discussion of hypnotic trance induction methods or techniques, while inclusive, does not seem sufficiently thorough to be of practical value. The reviewer must also take issue with the assumption that when patients are hypnotized without their consent that this consent is necessarily implied. While it is, indeed, to be recognized that the patient deserves the respect of the therapist and must be given humane treatment, there are wide differences in how much control can be maintained by a therapist in a hypno-therapeutic situation. This, it would seem, is a function of individual differences in personality dynamics among patients. The evidence that some patients will prolong the trance state is significant, and the author's agreement with Erickson that the dynamics of the situation can be utilized in working out the resistance to dehypnotization is appropriate. The presentation of cases given brief psychotherapy hypnotically for apparent medical and surgical emergencies paves the way for more efficient handling of cases that might prove long range problems of undetermined origin. Everyday medical practice is cluttered with such unresponsive patients. Without direct reference to the problem, some of Rosen's data edges suggestively on the question of iatrogenicity. Many of the patients seem to have achieved a "medical training" through the inadvertent efforts of their doctor.

Hypnotic intensification of emotion is aptly elaborated upon as a technique. It is pointed out that the procedure differs from the mere suggestion of conscious awareness of a named emotion. The experience of emotion during a therapeutic session may have extreme effectiveness in expediting difficult therapy. Definition of emotion attempted in this chapter is, however, superficial and perhaps confusing. For example, the introduction of such definitions as Whitehorn's[4], "the emotions as we know of them empiri-

[4]A sentiment is "an emotional disposition which has reference to an object, person, or abstract idea, and lacks the characteristic of a true emotion." It may also be "An acquired disposition to certain types of emotional experience and action, in relation to some one object or to any object of some one kind (Shand)" or "an experience made up chiefly of ideas and systematic sensations." (CF. Warren, H. C. Dictionary of psychology. Boston: Houghton Mifflin, 1934).

cally in the clinic and in ordinary life are the expression of sentiments in whose development there has been a large measure of cultural and conventional training," do not help. Treatment of the indications and contraindications of the technique considered are interesting, and it is true that often the problem lies in the psychiatrist's anxiety rather than the patient's. Reference to the dangers of the use of hypnotic techniques is met, yet one is not clear as to what is meant by a dynamically-oriented psychiatrist. Is it a Freudian? Nor is it clear why a dynamically oriented psychologist cannot serve the same purpose. This comment, however, does not detract from the veracity of the suggestion regarding the personality implications of hypnotic research.

The diagnostic value of hypnotic method is aptly presented. That hypnosis is a valuable tool in this area is clear. The elicitation of new patterns of disorder by symptom removal (diagnostically)[5] is provocative and instructive both pragmatically and theoretically. The very handling of hypnosis by a patient is markedly revealing.

Dr. Rosen's book taken in toto is an exciting experience in psychotherapeutic reading. It has the dynamic and dramatic qualities which elicit thinking and experiment. On the other hand, it suffers from what the reviewer considers poor construction. Methodology is scattered throughout the volume, albeit preceding or following clinical data. There is an amount of unnecessary repetition and sometimes inadequate linking of the presented material to the available data in the field.[6] The reviewer feels that a basic section dealing with the description of techniques and general orientation toward hypnosis would have enhanced the solidity of the volume. Likewise, since no conclusion was reached, "emotion," for example, could have been defined simply in the author's own terms and this section omitted. Perhaps a short glossary[7] in the back of the book or some footnote definitions would have been helpful in regard to clarification of special usage of terms. These features notwithstanding, the book is worth the reading and blazes the way for further research and clinical use of hypnosis.

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[5]The veiling of one disorder by another psychiatrically is well known but has not been applied diagnostically to any extent. A good example is the asthma-schizophrenia relationship often shown. (CF. Funkenstein, D. Psychophysiologic relationship of asthma and urticaria to mental illness. Psychosom. Med. 1950, 12, 377-385.)

[6]Some passages are vague and ambiguous, and one error, at least, is confusing. For example, reference to Kline on page 268 reads: "And Kline seems to feel that emotions and emotional disturbances may perhaps be considered as a product of developmental—constitutional influences on experimental (instead of experiential) involvements of the individual."

[7]For example, Rosen refers to a case of apparent Guillain-Barré. Even many professional readers may not know what this means. For example, one physician asked the reviewer because he could not find the term in Gould's Medical Dictionary. Guillain-Barré is a myeloradiculoneuritis (named after two of three neurologists who first grouped the syndromes in 1916). It is marked in early stages by pain or paresthesia of the extremities, weakness of the feet and later the hands, and muscle tenderness.

Gindes, Bernard C. *New Concepts of Hypnosis (As an adjunct to Psychotherapy and Medicine).* New York: Julian, 1951. Pp. xiii–262. $4.00

Robert Lindner, in his introduction to Dr. Gindes' new book, gives praise to the author for distinguishing between hypnosis as a method and hypnosis as a condition. This indeed is effectively attempted by the author, although at times the distinction is not a simple one. This becomes increasingly obvious when it is realized that the hypnotic method is in itself a means of eliciting psychodynamics on the part of the patient.

Beginning with a justification for its use, Dr. Gindes presents a series of successful cases. While some of these are impressive, the chapter could well be enhanced by a little more interpretation of the role of hypnosis. Perhaps, too, it suffers from being somewhat propagandistic – albeit this is still a characteristic of much writing on hypnosis.

Gindes traces the historical roots of hypnosis and concludes that it is having its third renascence. Beginning perhaps as a religious rite, the background is laid for Mesmerism and the usual discussion follows regarding the mass activities at the bacquet; DePuysegur, Father Gassner, Braid, Bureq's metaloscopy, and Charcot. Metalotherapy, or the assumption that the fate of the patient depended upon the correct use of metals, was accepted not only by Bureq but later by Charcot himself. Liebault and Bernheim are also mentioned in this section of Gindes' book. Then comes theory. Hypnosis is not sleep. Brief excerpts from several sources are presented and finally Wible and Jenness are quoted along with Nygard, Bass, and the electroencephalographic data of Gindes himself.

A very short section of physiological changes noted in hypnosis is followed by a more thorough review of hypnotic phenomena such as amnesia, sensory control, post-hypnosis, release of inhibitions, etc. Gindes' discussion of whether or not crime will be committed under hypnotic suggestion by a non-criminal person presents the usual data. It seems that Dr. Gindes takes a position in favor of the increased susceptibility for criminal performance under hypnotic suggestion, but he does not present any of the more recent data in this area.

His presentation of how hypnosis is maintained is a restatement of the Salpetriére-Nancy controversy and the position of Freud. Regression and memory phenomena take up a little more space. This section, while clear and enlightening, gives no reference to such recent writers as are later referred to (Wolberg, etc). As a theoretical chapter, Gindes' review is much too brief.

Mechanisms and characteristics of hypnosis are both important aspects of the phenomenon. The former description sets forth the ingredients of hypnotic induction. This is a chapter concerned with an analysis of the place of misdirected attention, belief, expectation, and imagination in hypnosis. In characterizing hypnosis, Gindes wisely presents the role of the patient. Here, as before, he directs the reader to an awareness of the emotional stimulation involved in hypnotic states. The analogy to mob behavior is a pertinent and effective one. On the other hand the comparison to an actor (although Sarbin advocates this interpretation) is to this reviewer

open to question, albeit acting and hypnotic behavior may overlap in some aspects.

An extended discussion of suggestion is helpful in focusing on hypnotic dynamics. In this section, Gindes emphasizes the possibility of causing subjects to perform acts against their better judgment. Placing the hypnotic state between waking and sleeping, Gindes also compares hypnosis to sleep-walking. He is aware of Hull's[1] disagreement with Pavlov's contention regarding hypnosis, but nonetheless makes strong claim for the point of view mentioned above, placing the hypnotic state on a waking-sleep continuum.

Failures in hypnosis are due to errors of the therapist in most cases, claims Gindes, and he then re-examines the conditions for hypnosis. Perhaps one might disagree with Gindes' statement: "With hypnotism we desire to create an automaton, but if the subject were already of such mental calibre, he would lack the necessary concentration." It is to be questioned whether one desires to create, or ever does create, an automaton. From a dynamic standpoint, hypnosis is handled individualistically by each subject despite certain common denominators of the state.

Preparing the new patient does require telling him what to expect and what not to expect. While, however, one agrees with some of Gindes' rules for the environment and the therapist, caution must be used in avoiding too rigid an approach. The patient must be recognized as an individual.

The review of objective and subjective methods of induction is impressive. Provocative are the methods of Moutin – pressure in the shoulder area and the description of magnetism. The author is openminded in regard to a possible "magnetic" action in the body. In this respect, it is noteworthy that Tromp[2] has recently compiled a volume dealing with so-called "Psychical Physics" and that this latter writer treats hypnosis in his study. Gindes' description of techniques distinguishes the approaches depending upon sensory fatigue, etc. and those which he calls subjective, based upon his three attributes – belief, expectation and imagination. After denying the relationship of the hypnotic state in lower animals to that of man, hypnosis is said to depend upon suggestion in the latter. Here Gindes emphasizes the lack of necessity for physical "props" and he describes the procedure of Bernheim, among others. Discussion is devoted to depth of hypnosis, post-hypnotic suggestion, and waking the subject. The author's recommendation that a subject be awakened carefully is appropriate.

The last two chapters in the book deal with suggestive therapy and hypnoanalysis and hypnosynthesis. Pointing out that suggestions work on the basis of association, the author proceeds to show the startling effectiveness of suggestion despite individual differences in susceptibility. Gindes points out that while suggestion is invaluable, it must be cautiously applied. The problem of symptom removal is examined. Techniques are outlined for dealing with fear, for improving vision, for treatment of obesity, among others. Gindes reports success with the use of the Bates System under

[1]Bass' data according to Hull controverts Pavlov's hypothesis regarding hypnosis as a transitional state between the waking condition and true sleep. The work of Bass, says Hull, indicates a sharp demarcation between the trance state and even drowsiness or incipient sleep.

[2]Tromp, S. W., Psychical Physics. New York: Elsevier, 1949.

hypnosis. He reports success in the treatment of menstrual conditions, insomnia, and general nervousness. The use of hypnosis in obstetrics is given several pages and the treatment of alcoholism is examined.

Finally, Gindes traces the relationship of hypnosis and psychoanalysis. Analytic techniques are defined and concepts from analysis are presented. The subject is placed in medium sleep. The analyst places his hand on the back of the patient's neck and suggests that the patient will remember pertinent experiences. A "motion picture technique" in which the patient views a screen showing his life story, hypnotic dream analysis, word-association – these with suggestion and hypnosynthesis, form the therapeutic procedure.

There is appended a demonstrative case history showing hypno-analysis and hypnosynthesis.

Gindes' book is simply written and gives a good survey of the field for a beginner. It is in most places too superficial and lacking in recent data, but it is adequate for the untrained general practitioner. References are well placed at the end of each chapter and the form and arrangement are comfortable; however, the lack of an index is a serious drawback.

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